

Family Sternoptychidae

Body short, front part elevated, compressed or elongate and front part not differentiated by its height from posterior part. Eye large. Mouth cleft vertical or nearly so. Small teeth in jaws, present or absent on vomer. No barbel. Gill membranes free from isthmus or attached, also sometimes delicately united. Gill rakers well developed. Gills 4. Branchiostegals 5 to 11. Pseudobranchiae present or absent. Scales absent or very loose. Preorbital, postorbital and ocular luminous organs single; on mandibular

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symphysis, in branchiostegal  
membrane and on body in groups;  
between isthmus and ventral in  
ventral and lateral series, between  
ventral and caudal in 1 series;  
body without smaller scattered  
luminous organs; no whitish punctiform  
organs on fins. Dorsal origin,  
which may be preceded by spines,  
median or postmedian, above or  
before anal origin. Adipose fin low,  
totally or partly above hinder  
part of anal, which may be  
divided. Ventrals small, below or  
before dorsal origin.

## Analysis of genera

a. An abrupt ventral constriction between trunk and tail; no teeth on vomer; dorsal fin preceded by large triangular transparent plate.

b.<sup>1</sup> Eyes normal; space between trunk and tail filled by transparent integumentary plate; anal not divided. Sternoptyx.

b.<sup>2</sup> Eyes telescopic; body hatchet shaped, ventral constriction without integumentary plate; anal divided. Argyropselcus.

a.<sup>2</sup> No abrupt ventral constriction between trunk and tail; eyes normal; teeth on vomer; dorsal fin preceded by forked spine; anal not divided. Polyipnus.



Genus Sternoptyx Hermann

Sternoptyx Hermann, Der Naturforscher, pt. 16, 1781, p. 33. Type Sternoptyx diaphana Hermann, monotypic.

Sternoptix Cuvier, Règne Animal, vol. 2, 1817, p. 171. Type Sternoptyx diaphana Hermann.

Body greatly elevated, compressed. Snout very short. Eye large. Mouth cleft subvertical, upper edge formed by very short premaxillaries and maxillaries. Lower jaw received in upper, hind lower angle with short spine, - as also 1 at preopercle angle and symphysis of humeral



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bones. At pelvic symphysis 2  
spines, 1 directed forward, smaller  
backward. Bifid spine behind  
vent. Numerous small unequal  
teeth in jaws, none on palate. Gill  
opening very wide, membranes  
joined to isthmus. Gill rakers  
moderate. No scales. Luminous organs  
1 below and 1 behind eye, 1 opercular,  
group on branchiostegals, group  
on isthmus, series along ventral  
edge, series between ventrals and  
anals, above anal, behind anal,

above pectorals. Dorsal origin  
postmedian. Upper edge of predorsal  
plate dentated and strong spine  
along its hind edge. Low adipose fin  
reaches nearly from dorsal to caudal.  
Caudal broadly forked. Anal on  
tegumentary abdominal fold between  
trunk and tail. Pectoral low,  
extends beyond small ventral.

Sternoptyx diaphana Hermann

Sternoptyx diaphana Hermann, Der  
Naturforscher, pt. 16, 1781, p. 8, pl. 1, fig. 1-  
2. Jamaica. — Gmelin, Syst. Nat. Linn.,  
vol. 1, 1789, p. 1150 (copied). — Walbaum,  
Arted. Pisc., vol. 3, 1792, p. 698 (copied).  
— Schneider, Syst. Ichth. Bloch, 1801, p.  
494 (copied). — Hermann, Obs. Zool.  
Fishes, 1804, pp. 301, 328 (copied). —  
Valenciennes, Hist. Nat. Poiss., vol. 22, 1849,

— Miner, Rep. U.S. Fish Comm., pt. 11, 1883 (1885),  
p. 196 (N.  $38^{\circ}44'$  W.  $72^{\circ}38'$ , 1209 fathoms). —  
Günther,

1864, p. 387 (compiled). — Rep. Voy. Challenger,  
vol. 22, 1887, p. 169, pl. 45, figs. d-d'



Sternoptyx diaphana Hermann

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Naturforscher, pt. 16, 1781, p. 8, pl. 1, figs. 1-  
2. Jamaica. — Gmelin, Syst. Nat. Linn.,  
vol. 1, 1789, p. 1150 (copied). — Walbaum,  
Arted. Pisc., vol. 3, 1792, p. 698 (copied).  
— Schneider, Syst. Ichth. Bloch, 1801, p.  
494 (copied). — Hermann, Obs. Zool.  
Fishes, 1804, pp. 301, 328 (copied). —  
Valenciennes, Hist. Nat. Poiss., vol. 22, 1849,  
p. 415 (25 leagues north of Saint Helena;  
W. Long.  $45^{\circ}$  N. Lat.  $29^{\circ}$  from shark stomach).  
— Günther, Cat. Fishes Brit. Mus., vol. 5,  
1864, p. 387 (compiled). Rep. Voy. Challenger,  
vol. 22, 1887, p. 169, pl. 45, figs. d-d'

— Vaillant, Exped. Sci. Travailleur et Talisman,  
Paris, 1888, p. 102 (coast of Morocco; Azores;  
1123 to 2792 meters).

— Goode and Bean, Oceanic Ichth., 1895,  
p. 124, pl. 39, fig. 146 (off Santa Cruz, 508 <sup>fathoms</sup> ~~meters~~;  
↑ N.  $13^{\circ}$  to  $41^{\circ}$  W.  $18^{\circ}$  to  $62^{\circ}$ , 229 to 1686 <sup>fathoms</sup> ~~meters~~;  
Grand Banks, 150 fathoms).

vol. 19, 1896, p. 416 (Hawaiian Islands,  
in 313 fathoms). — Ulrich, Journ.

— Jordan and Evermann, Bull. U. S. Nat. Mus., no.  
47, pt. 1, 1896, p. 603 (compiled).

331 (off Malabar coast, in 912 to 931 fathoms);  
Cat. Deep Sea Fishes Indian Mus., 1899,  
p. 136 (Arabian Sea; off Malabar coast;  
912 to 931 fathoms). — Gilbert, Bull. U. S.  
Fish Comm., vol. 23, pt. 2, 1903 (1905), p.  
609 (off north Molokai; south of Oahu;



(south of Australia; Kermadec Islands; Philippines; north of New Guinea; south of Yeddo; in 500 to 2500 fathoms).

— Goode and Bean, Oceanic Ichth., 1895,

p. 124, pl. 39, fig. 146 (off Santa Cruz, 508 <sup>fathoms</sup> ~~meters~~).

— Gilbert and Cramer, Proc. U. S. Nat. Mus.,

vol. 19, 1896, p. 416 (Hawaiian Islands,

in 313 fathoms). — Alcock, Journ.

Asiatic Soc. Bengal, vol. 65, pt. 2, 1896, p.

331 (off Malabar coast, in 912 to 931 fathoms).

Cat. Deep Sea Fishes Indian Mus., 1899,

p. 136 (Arabian Sea; off Malabar coast;

912 to 931 fathoms). — Gilbert, Bull. U. S.

Fish Comm., vol. 23, pt. 2, 1903 (1905), p.

609 (off north Molokai; south of Oahu;



near Kanai; Kaiwi Channel; Bird Island; 293 to 1024 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 115, text figs. 56-63 (south of Canaries; off Sierra Leone; Gulf of Guinea; off south-west Africa between Congo mouth and Cape Colony; between New Amsterdam and Sumatra; Bengal Bay; between Ceylon and Maldives; between Seychelles and Zanzibar; west of Chagos). — Waite, Records Canterbury Mus., vol. 1, no. 1, April 25, 1907, p. 11 (reference). — Jugmayer, Rés. Camp. Sci. Monaco, vol. 35, 1911, p. 54, pl. 2, fig. 5 ( $N.^\circ 31^\circ$  to  $36^\circ W.$   $4^\circ$  to  $42^\circ$ , 1400 to 5100 meters). — Murray and Hjort, Depths of the Ocean, 1912, p. 612 (Gibraltar to Gran Canaria, thence to Fayal, Azores to

— Norman, Discovery Rep., vol. 2, 1930,  
p. 304.

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Newfoundland, thence to Glasgow, 1215  
to 3886 fathoms). — Weber, Siboga  
Exped., vol. 57, Fische, 1913, p. 22 (Bali,  
Flores, Celebes Seas, Molucca Passage,  
Malinipa Strait, Cram, Banda, Timor  
Seas, 828 to 2477 meters). — Weber and  
Beaufort, Fishes Indo Austral. Archipelago,  
vol. 2, 1913, p. 132, fig. 48 (above materials).  
— Pappenheim, Deutsch. Südpolar Exped.,  
vol. 15, pt. 2, 1914, p. 183 (S.  $10^{\circ}$  to  $23^{\circ}$  W.  $6^{\circ}$  to  
 $20^{\circ}$ , 1200 to 3000 meters; N.  $5^{\circ}$  to  $17^{\circ}$  W.  $21^{\circ}$  to  
 $29^{\circ}$ , 1500 to 3000 meters). — Jespersen, Rep.  
Danish Oceanogr. Exped. Medit., no. 3,  
vol. 2, A. 2, April 15, 1915, p. 28. — Roule,  
Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 24



Argyropelecus offersii (Cuvier)

Sternoptix offersii Cuvier, Règne Animal,  
ed. 2, vol. 2, 1829, p. 316. Atlantic Ocean.

Argyropelecus offersii Valenciennes, Hist.

Nat. Poiss., vol. 22, 1849, p. 408 (south east  
of Cape of Good Hope; between Canaries and  
Brazil). — Bleeker, Naturk. Tijdschr.

Nederl. Indie, vol. 21, 1860, p. 56 (reference).

Argyropelecus offersii Günther, Cat. Fishes  
Brit. Mus., vol. 5, 1865, p. 386 (compiled);

Rep. Voy. Challenger, vol. 22, 1887, p. 167

(off Cape Finisterre). — Goode and Bean,

Oceanic Ichth., 1895, p. 126, pl. 39, fig. 148

(Atlantic materials). — Brauer, Deutsch.

Tiefsee Exped. Valdivia, vol. 5, Tiefsee-fische,

(south east of Pico, Azores, 1748 meters;  
between Pico and São Jorge; Cape  
Finisterre, 3500 meters; between Portugal  
and Azores, 2100 meters). — Vaillant,  
Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 129  
(N.  $32^{\circ}$  to  $39^{\circ}$  W.  $17^{\circ}$  to  $26^{\circ}$ , 1940 to 4261 meters).

— Gilchrist and Von Bonde, Fisher. Marine  
Biolog. Survey South Africa, Rep. no. 3,  
1922 (1924), no. 7, p. 9 (off Cape Point,  
312 to 1014 fathoms). — Barnard, Ann.  
South African Mus., vol. 22, June 1925, p.  
154 (compiled). — Horman, Discovery Rep.,  
vol. 2, 1930, p. 305 (S.  $00^{\circ}$  to  $35^{\circ}$  or N.  $5^{\circ}$ , W.  $00^{\circ}$   
to  $19^{\circ}$  or E.  $4^{\circ}$  to  $16^{\circ}$ , 125 to 2700 meters).



near Kauri; Kaiwi Channel; Bird  
Island; in 293 to 1024 fathoms). —

Brauer, Deutsch. Tiefsee Exped. Valdivia,  
vol. 5, Tiefsee-fische, 1906, p. 115, text figs. 56  
— 63 (between New Amsterdam and  
Sumatra; Bay of Bengal; between Ceylon  
and Maldives; between Seychelles and  
Zanzibar; west of Chagos Archipelago). —

Waite, Records Canterbury Mus., vol. 1, no. 1,  
Apr. 25, 1907, p. 11 (reference). — Weber,  
Siboga Exped., vol. 57, Fische, 1913, p. 22  
(Bali, Flores, Celebes Seas, Molucca  
Passage, Malinipa Strait, Ceram, Banda,  
Timor Seas, in 828 to 2477 meters). —

Weber and Beaufort, <sup>no</sup> Fishes Indo Austral.



Sternoptyx diaphanus Lütken, Kon.  
dansk. Vidensk. Selsk. 1892.

Köbenhavn, ser. 6, vol. 7, 1892, p. 283

(S.  $4^{\circ}$  E.  $87^{\circ} 50'$ ; S.  $19^{\circ} 30'$  W.  $26^{\circ}$ ; N.  $28^{\circ}$  W.  $35^{\circ}$ ;

N.  $30^{\circ}$  W.  $19^{\circ}$ ; N.  $46^{\circ}$  W.  $24^{\circ}$ ). — Collett, Rés.

Camp. Sci. Monaco, vol. 10, 1896, p. 125

(N.  $44^{\circ} 1' 26''$  E.  $15^{\circ} 31'$ ; N.  $38^{\circ} 33' 21''$  E.  $30^{\circ} 28' 54''$ ;

1300 meters).

Sigmops stigmaticus Gill, Proc. U. S.  
Nat. Mus., vol. 6, 1883 (1884), p. 256.  
L. Lat.  $38^{\circ}19'26''$  W. Long.  $68^{\circ}20'20''$ , in  
2361 fathoms. (Gulf Stream.)

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~~Archipelago, vol. 2, 1913, p. 132, fig.  
48 (above materials).~~

Sternoptyx hermanni Lacépède, Hist.  
Nat. Poiss., vol. 5, 1803, pp. 612, 613  
(on Hermann).

? Sternoptyx obscura Garman, Mem. Mus.  
Comp. Zool., vol. 24, 1899, p. 232, pl. 53, fig. 1.  
N.  $1^{\circ}$  to  $7^{\circ}$  or S.  $0^{\circ}$  W.  $78^{\circ}$  to  $89^{\circ}$ , 134 to 1832  
fathoms.



Depth  $1\frac{1}{10}$  to  $1\frac{1}{8}$ ; head  $2\frac{2}{5}$  to 3, width  $1\frac{3}{4}$  to 2. Snout  $3\frac{2}{3}$  to 5 in head from snout tip; eye  $1\frac{4}{5}$  to  $1\frac{7}{8}$ , greatly exceeds snout or interorbital; maxillary reaches  $\frac{1}{5}$  to  $\frac{1}{4}$  in eye, length  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in head from snout tip; interorbital  $3\frac{4}{5}$  to  $4\frac{1}{5}$ , low, with deep median groove. Gill rakers 4+7, lanceolate, slender, subequal with gill filaments or  $1\frac{3}{4}$  in eye.

Small photophore in angle of preopercle ridge; 1 postorbital, close behind upper hind eye edge, less distinct with age; 1 on lower portion of opercle behind preopercle spine; 3 small anterior branchiostegals.

Lateral series of photophores as 3 close set at same level little above to little below level of pectoral fin origin; lower or ventral series as 5 on isthmus, 10 abdominals, 3 well elevated ventrals, 3 above transparent area above anal base with single small photophore close in advance and still higher, then 4 or 5 between caudal and anal.

D. 10 to 12, first ray 2 to 3 in total head length; A. 12 to 14, fin height 3 to  $3\frac{1}{5}$ ; caudal 1 to  $1\frac{1}{8}$ , well forked; least depth of caudal peduncle  $2\frac{1}{5}$  to  $2\frac{3}{4}$ ; pectoral 1 to  $1\frac{3}{4}$ ; ventral 3.

Silvery white, including iris.  
Back and head above brownish.  
Fins pale to whitish.

Atlantic, Indian and Pacific Oceans.

4318.

D. 5671. Chenoki Point, S.  $31^{\circ}$ E., 42.5 miles (S.  $1^{\circ}5'E.$   $118^{\circ}56'$ ), Macassar Strait. In 960 fathoms. December 30, 1909. Length 48 mm.

4788. D. 5317. China Sea, vicinity Formosa (N.  $21^{\circ}36'E.$   $117^{\circ}27'$ ). In 230 fathoms. November 5, 1908. Length 18 mm.

4088. D. 5606. Dodepo Island (W.) N.  $3^{\circ}$ W., 10.8 miles (N.  $0^{\circ}16'28"E.$   $121^{\circ}33'30"$ ), Gulf of Tomini, Celebes. In 834 fathoms. November 17, 1909. Length 54 mm.

4503.

D. 5320. China Sea, vicinity Formosa (N.  $20^{\circ}58'E.$   $120^{\circ}3'$ ). In 1804 fathoms. November 6, 1908. Length 15 to 41 mm. 3 examples.



D. 5437. Hermana Mayor Light, N.  $69^{\circ}$  E., 4.9 miles ( $N. 15^{\circ} 45' 54''$  E.  $119^{\circ} 42' 45''$ ), west coast of Luzon. May 8, 1909. Length 30 to 52 mm. 2 examples.

D. 5185. Lusaran Light, N.  $23^{\circ}$  E., 25.50 miles ( $N. 10^{\circ} 5' 45''$  E.  $122^{\circ} 18' 30''$ ), between Panay and Negros~~z~~. In 638 fathoms. March 30, 1908. Length 18 mm.

D. 5618. Mareh Island, S.  $69^{\circ}$  E., 7.8 miles ( $N. 0^{\circ} 37'$  E.  $127^{\circ} 15'$ ), Molucca Passage. In 417 fathoms. November 27, 1909. Length 28 mm.

D. 5619. Mareh Island (S.) S.  $78^{\circ}$  E., 7 miles ( $N. 0^{\circ} 35'$  E.  $127^{\circ} 14' 40''$ ), Molucca Passage. In 435 fathoms. November 27, 1909. Length 21 mm.

D. 5647. North Island (S.), S.  $87^{\circ}$  E., 11.6 miles ( $S. 5^{\circ} 34'$  E.  $122^{\circ} 18' 15''$ ), Buton Strait. In 519 fathoms. December 16, 1909. Length 22 mm.

962

D. XI, 15, I, third spine 2 to  $2\frac{7}{5}$  in head, seventh ray  $1\frac{1}{5}$  to  $1\frac{4}{5}$ ; A. III, 9, I, second spine  $3\frac{1}{4}$  to  $3\frac{1}{2}$ , fifth ray  $1\frac{1}{3}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , emarginate; least depth of caudal peduncle  $2\frac{7}{8}$  to  $3\frac{1}{4}$ ; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{3}{5}$ .

Light brown to whitish generally, each scale on body with small white spot. Broad dark brown band from side of snout, wide as eye, to occiput or just before spinous dorsal. Second broader dark brown band from middle of spinous dorsal down and expanding below to embrace abdomen. Third dark brown band from entire front of soft dorsal and last dorsal spines down and arching back and obliquely on caudal peduncle along lower caudal lobe to its tip; caudal



D. 5349. Point Tabonan, N.  $85^{\circ}$  E.,  
45.2 miles (N.  $10^{\circ}54'E$ .  $118^{\circ}26'20''$ ),  
Palawan Passage. In 700 fathoms.  
December 27, 1908. Length 28 mm.

9561. D. 5632. Velang Point  
(Bachian Island), N.  $56^{\circ}$  W., 12.5 miles  
(N.  $1^{\circ}$  E.  $127^{\circ}50'$ ), south of Patiente Strait.  
In 845 fathoms. December 2, 1909.  
Length 40 mm.

9868. D. 5460. Sialat Point Light.  
N.  $24^{\circ}$  E., 8.2 miles (N.  $13^{\circ}32'30''$  E.  $58^{\circ}6'$ ),  
east coast Luzon. In 565 fathoms.  
June 10, 1909. Length 65 mm.

2250. D. 5463. Sialat Point, ~~Light~~  
~~Light~~ Light, S.  $74^{\circ}$  E., 3.9 miles (N.  $13^{\circ}40'$   
 $57''$  E.  $123^{\circ}57'45''$ ), east coast of Luzon.  
In 300 fathoms. June 16, 1909.  
Length 50 mm.



lobes terminally dusky. Lower anal edge dusky. Ventral largely dusky, especially terminally.

Red Sea, Arabia, Zanzibar, Mozambique, Réunion, India, Siam, Singapore, East Indies, Philippines, Queensland, Melanesia. A very handsome species with striking color pattern. Bleeker gives the maximum of 14 examples at 260 mm. The dark bands are relatively much wider in the young.

Russell's Botia champa is a good

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Fishes of Coromandel, vol. 1, 1803, p. 77, pl.

99. Vizagapatam.

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representation of this fish. He gives its length as 280 mm. Diapope siamensis Valenciennes is described with: D. XI, 10; A. III, 11; length 305 mm.

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D. 5120. Sombrero Island, S.  $79^{\circ}30'$   
E., 19.2 miles (N.  $13^{\circ}45'30''$  E.  $120^{\circ}30'15''$ ),  
Balayan Bay and Verde Island  
Passage. In 393 fathoms. January 21,  
1908. Length 26 mm.

D. 5287. Sombrero Island, N.  $68^{\circ}$  E.,  
11.25 miles (N.  $13^{\circ}37'40''$  E.  $120^{\circ}39'$ ), China  
Sea, vicinity southern Luzon. In 379  
fathoms. July 20, 1908. Length 15 mm.

26235 U.S.N.M. Off Grand Banks.  
In 150 fathoms. Schooner "Guy Cunningham".  
Length 31 mm.

32659 U.S.N.M. N.  $37^{\circ}$  <sup>46'30"</sup> W.  $74^{\circ}00'00''$   
Albatross Station. Length 44 mm.

33471 U.S.N.M. N.  $41^{\circ}13'$  W.  $66^{\circ}00'50''$ .  
Albatross Station 2076. In 906 fathoms.  
Length 19 to 27 mm. 2 examples.

33563 U.S.N.M. N.  $39^{\circ}18'30''$  W.  $68^{\circ}24'$ .  
In 1686 fathoms. Albatross Station 2101.  
Length 36 mm.

44590 U.S.N.M. N.  $13^{\circ}32'40''$  W.  $62^{\circ}54'00''$   
Albatross Station. Length 30 mm.  
690 fathoms.



47719 U.S.N.M. N.  $21^{\circ}15'$  W.  $157^{\circ}30'$ . <sup>646</sup>

Albatross Station 3473. Length 30 mm.

53052 U.S.N.M. N.  $35^{\circ}09'50''$  W.  $74^{\circ}57'40''$ .  
In 938 fathoms. Albatross Station 2111.  
Length 32 to 36 mm. 2 examples.

55288 U.S.N.M. 1  
Albatross Station 4111.  
Length 33 mm.

55289 U.S.N.M. 1  
Albatross Station 3888.  
Length 28 mm.

55290 U.S.N.M. 1  
Albatross Station 4155.  
Length 22 mm.

55291 U.S.N.M. 1  
Albatross Station 4026.  
Length 25 mm.

57884 U.S.N.M. N.  $6^{\circ}17'$  W.  $82^{\circ}05'$ . <sup>11272 fms.</sup>  
Albatross Station 3360. Length 33 mm., without caudal.  
<sup>41°03' N.  $81^{\circ}31'$  8990 fms.</sup>  
Albatross Station 3380. Length 40 mm., without caudal.



7° 06' W. 79° 48' 1.168 mm. 647  
Albatross Station 3388. Length 27 mm.,  
without caudal. All as Sternoptyx  
obscura.

83889 U.S.N.M.  
Albatross Station 2657.  
Length 31 mm.

84096 U.S.N.M. Inauna Loo, Hawaii.  
J. Reinhardt. Length 28? mm., dry example.  
As Polyipnus nuttingi.

84497 U.S.N.M.  
Albatross Station 2656.  
Length 20 mm.

89912 U.S.N.M. N. 32° 50' W. 64° 18'.  
Mus. Comp. Zool. no. 38. Station 323.  
Length 24 to 38 mm. 6 examples.

1 example U.S.N.M.  
Albatross Station 2553.  
Length 20 mm.

1 example U.S.N.M.  
Albatross Station 4657.  
Length 34 mm.

Genus Argyroleleus Cocco

Argyroleleus Cocco, Archiv. R. Acad.

Peloritano, 1829, p. 146. Type

Argyroleleus hemigymnus Cocco, monotypic.

Pleurothyris Lowe, Hist. Fishes Madeira,

1843, p. 64. Type Sternoptix offersii

Cuvier, monotypic.

Sternoptychides Ogilby, Proc. Linn. Soc. New

South Wales, ser. 2, vol. 3, 1888 (1889), p. 1313.

Type Sternoptychides amabilis. Ogilby,

monotypic.

Body compressed, short, front  
portion much higher than posterior,  
short ventral ridge with an anterior  
and 2 posterior spines. Upper jaw

edge formed by premaxillary and curved maxillary, which enclose mandible, which furnished with prominent hook at symphysis and at lower hind angle. Palatines with row of small curved teeth. Preopercle ventrally with 1 or 2 spines. Gill opening wide, membranes free from isthmus and each other. Gill rakers long. Branchiostegals 9. No scales. Luminous organs on head before and below eyes, on opercle, group on branchiostegals, ventral and



lateral series on trunk, 3 groups  
on tail. Predorsal plate serrated,  
followed by 7 to 9 rays before anal.  
Long low adipose fin present. Caudal  
deeply emarginate. Pectoral long,  
low. Ventral very small.

## Analysis of species

a. Photophores in nearly continuous series.

b.<sup>1</sup> Depth (without dorsal ridge)  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; predorsal ridge rather low, length of exposed portion of last spine more than twice in dorsal fin base. affinis.

b.<sup>2</sup> Depth (without dorsal ridge)  $1\frac{4}{5}$  to 2; predorsal ridge higher, length of exposed portion of last spine  $1\frac{3}{5}$  to  $1\frac{2}{3}$  in dorsal fin base. gigas.

a.<sup>2</sup> Postabdominal photophores in 3 groups as preanal, supraanal and caudal.

c. Single serrated abdominal spine; supraanal photophore separated from preanals by space more than half length of supraanals and from caudal by space greater than supraanal series length. hemigymnus.

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c.<sup>2</sup> Pair of smooth abdominal spine; supraanal photophore separated from preanals by very short interspace and from caudal by space less than length of supraanal series.

d.<sup>1</sup> Hind abdominal spine longer than anterior and directed forwards; adults with dorsal and abdominal ridges serrated and with double series of spines on lower edge of caudal peduncle.  
aculeatus.

d.<sup>2</sup> Abdominal spines subequal or anterior longer; dorsal and abdominal ridges not serrated; no spines on caudal peduncle.

e.<sup>1</sup> Lower preopercle spine curved, upper very small or absent; depth  $1\frac{1}{2}$  J. offersi.



l.<sup>2</sup> Lower preopercle spine straight,  
upper moderate or small,  
directed backwards; depth  $1\frac{3}{5}$ .

sladeni.

Argyropelecus affinis Garman  
Argyropelecus affinis Garman, Mem.

Mus. Comp. Zool., vol. 24, 1899, p. 237.

N. Lat.  $15^{\circ}24'40''$  W. Long.  $63^{\circ}31'30''$ , in 683

meters. — Brauer, Deutsch. Tiefsee Exped.

Valdivia, vol. 15, Tiefsee-fische, 1906, p.

103, text figs. 43-44, pl. 7, fig. 1 (Bay

of Bengal; Chagos Islands; west of  
 Seychelles; north east coast of Africa

and Gulf of Aden; in 1000 to 2500 meters).

— Regan, Trans. Linn. Soc. London, ser. 2,  
 vol. 12, Zool., 1908, p. 218 (in 750 to 1000

fathoms near Farguhar Atoll). —

Jespersen and Taaning, Rep. Danish  
 Oceanogr. ~~Collection~~, Exped. Medit., no. 1,

vol. 2, A. 2, 1915, p. 6. — Townsend  
and Nichols, Bull. Amer. Mus. Nat.  
Hist., vol. 52, art. 1, May 16, 1925, p. 11  
(31° off. Todos Santos Bay, Lower California,  
868 fathoms). — Barnard, Ann. South  
African Mus., vol. 21, June 1925, p. 152,  
pl. 8, fig. 1 (compiled). — Horman,  
Discovery Rep., vol. 2, 1930, p. 301, <sup>fig. 9</sup> (N. 8° 12'  
W. 18° 49', 450 to 500 meters).

Argyropelecus hemigymnus (not Cocco)  
Goode and Bean, Oceanic Ichth., 1895,  
pl. 39, fig. 147.

? Argyropelecus elongatus Esmark, Forh.  
vol. 1, (1871),  
Vid. Selsk. Christiania, 1870, p. 489.  
Skibsfører Thoresen i Tønsberg i det  
chinesiske Hav.



Genus Polymetne McCulloch

Polymetne McCulloch, Biol. Results  
Endeavour, vol. 5, pt. 4, June 8, 1926,  
p. 167. Type Polymetne illustris McCulloch,  
monotypic.

Depth 2 to  $2\frac{1}{4}$ ; head 3 to  $3\frac{1}{8}$ , width  $2\frac{1}{5}$ . Snout  $3\frac{3}{4}$  to  $3\frac{7}{8}$  in head from snout tip; eye  $2\frac{1}{5}$  to  $2\frac{1}{2}$ , greatly exceeds snout or narrow interorbital; maxillary reaches  $\frac{1}{3}$  to  $\frac{1}{2}$  in eye, expansion  $1\frac{1}{2}$  to  $1\frac{7}{8}$  in eye, length 1 to  $1\frac{1}{5}$  in head from snout tip; interorbital narrow bony prenum barely  $\frac{1}{8}$  of eye. Gill rakers  $8+13$ , finely lanceolate,  $1\frac{1}{2}$  in eye; gill filaments  $1\frac{2}{3}$  in eye.

Preorbital photophore close below nostrils; 1 on cheek at angle of preopercle ridge; 2 operculars, upper opposite lower part of eye,

lower just above and close behind  
 preopercle angle; 6 branchiostegals.  
 Upper lateral photophores 8 between  
 pectoral and ventral, second highest  
 on level with cheek photophore,  
 first and third lowest, then third to  
 eighth gradually higher until eighth  
 high as second; lower or ventral series  
 6 on isthmus, 12 abdominal of which  
 2 before pectoral base, 4 between ventral  
 and anal, 11 from front of anal to  
 caudal base of which 6 above anal  
 base.

D. VIII or IX, 9, first flexible ray  
 $3\frac{7}{8}$ ? in total head length, A. 13,



fin height  $4\frac{1}{4}$ ?; caudal  $1\frac{1}{3}$ ?  
 damaged; least depth of caudal  
 peduncle 3; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ; ventral  
 $2\frac{3}{4}$ ?

Largely silvery white, upper part  
 of head and back brownish. Iris  
 silvery gray. Photophores silvery or  
 pale yellowish white, with surrounding  
 tissues blackish.

Atlantic, Pacific and Indian Oceans.

44593 U.S.N.M. N.  $15^{\circ}24'40''$  W.  $63^{\circ}31'30''$ .  
 In 683 fathoms. Albatross Station 2117.  
 Length 35 mm., caudal lost.

87563 U.S.N.M.  
 off Lower California. In 930 fathoms.  
Albatross Station 5686. Length 45 mm.,  
 caudal lost.

Argyropelecus gigas horman

Argyropelecus gigas horman, Discovery  
Rep., vol. 2, 1930, p. 302, fig. 10. . . . . S.

32°45' W. 8°47', 650 meters; S. 2°49'30" W.

9°25'30", 800 to 1000 meters.

Depth  $1\frac{7}{8}$ ; head  $3\frac{1}{4}$  to  $3\frac{3}{4}$ . Snout  
 $3\frac{1}{10}$  in head from snout tip; eye  $3\frac{1}{10}$ ,  
subequal with snout; maxillary extends  
 $1\frac{3}{4}$  eye diameters below eye, hind end  
midway in eye, expansion equals eye,  
length  $1\frac{1}{5}$  in head from snout tip;  
no very long teeth in lower jaw; palatines  
toothless or very few feeble teeth  
anteriorly; preopercle with strong, straight  
or slightly curved downwardly directed  
spine at angle, above which much  
smaller spine directed outwards.  
Lower gill rakers 11.

One opercular photophore, close  
above level of lower edge of orbit.  
Lateral series 8 between pectoral and  
ventral, first 2 higher and others  
subequally low. Ventral series 2 before

Genus Sternoptychides Ogilby

Sternoptychides Ogilby, Proc. Linn. Soc. New  
South Wales, ser. 2, vol. 3, 1888 (1889), p.

1313. Type Sternoptychides amabilis  
Ogilby, monotypic.



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pectorals then 10 between pectoral and ventral, 4 between ventral and anal and 10 from anal origin to caudal of which 6 over anal.

Predorsal ridge rather high of 6 graduated spines up to last, which  $3\frac{1}{2}$  in head; D. 9, sixth ray  $2\frac{1}{10}$ ; adipose fin low, length  $1\frac{1}{3}$ ; A. 13, third ray 3; caudal  $1\frac{7}{8}$ ; least depth of caudal peduncle  $2\frac{1}{5}$ ; pectoral  $1\frac{3}{4}$ ; ventral 6.

Length 87 mm.

(Norman.)

Atlantic.

Argyropelecus hemigymnus Cocco

Argyropelecus hemigymnus Cocco,

Archiv. R. Acad. Peloritano, 1829, p. 146.

Messina). — Bonaparte, Iconogr. Fauna

Italia, vol. 3, pt. 1 Pesci, fasc. 28, 1840,

no pagination (Italy); Cat. Method. Pesc.

Europ., 1846, p. 37 (Mediterranean). —

Valenciennes, Hist. nat. Poiss., vol. 22, 1849,

p. 398 (Naples, Messina, Nice). — Günther,

Cat. Fishes Brit. Mus., vol. 5, 1865, p. 385

(Messina; Mediterranean); Rep. Voy.

Challenger, vol. 22, 1887, p. 167 (between

Shetland and Faroe Islands). —

Vaillant, Exped. Sci. Travailleur et

Talisman, Poiss., 1888, p. 103 (Gulf of



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Marsailles, Gulf of Gascony, Canaries,  
coast of Portugal, Coast of Morocco,  
741 to 1534 meters). — Lütken, Kon.

Dansk. Vidensk. Selsk. Skr. København,  
ser. 6, vol. 7, 1892, p. 283 (N.  $44^{\circ}$  to  $45^{\circ}$  W.  
 $24^{\circ}$  to  $26^{\circ}$ ; N.  $39^{\circ}$  W.  $10^{\circ}$ , 180 fathoms). —

— Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 8,  
1891, p. 126 (Bay of Bengal, 1803 fathoms).

— Carus, Prodr. Zool. Medit., vol. 2, 1893, p.  
568 (compiled). — Goode and Bean,

Oceanic Ichth., 1895, p. 126 (pl. 39 not fig.  
147) (N.  $39^{\circ}56'$  W.  $70^{\circ}35'$ ; 245 fathoms).

— Jordan and Evermann, Bull. U. S. Nat.

Mus., no. 47, pt. 1, 1896, p. 605 (compiled).

— Alcock, Journ. Asiatic Soc. Bengal,



vol. 65, pt. 2, 1896, p. 331 (reference);  
Cat. Deep Sea Fishes Indian Mus.,  
1899, p. 135 (Bengal Bay material). —  
Branner, Deutsch. Tiefsee Exped. Valdivia,  
vol. 5, Tiefsee-Fische, 1905, p. 106, text fig.  
45 (west of Cape Colony; Bay of Bengal;  
between New Amsterdam and Sumatra;  
between Ceylon and Chagos; between Chagos  
and Zanzibar, 1500 to 2400 meters). —  
Regan, Trans. Lin. Soc. London, ser. 2,  
Zool., vol. 12, 1908, p. 219 (diagnosis in key).  
— Zugmayer, Res. Camp. Sci. Monaco, vol.  
35, 1911, p. 51 (N.  $28^{\circ}$  to  $44^{\circ}$  W.  $0^{\circ}$  to  $19^{\circ}$ , 520  
to 4900 meters). — Fowler, Proc. Acad.  
Nat. Sci. Philadelphia, 1911 (1912), p.

571 (Italy). — Murray and Hjort,  
depths of the Ocean, 1912, p. 612, fig.  
458 (Plymouth to Gibraltar, thence to Gran  
Canaria, thence to Cape Bojador, Gran Canaria  
to Fayal, Azores to Newfoundland, thence  
to Glasgow, 1215 to 4700 meters). — Holt  
and Byrne, Dep. Agric. Techn. Instruct.  
Ireland, Sci. Invest., no. 1, 1913, p. 21,  
figs 7b-8 (Irish Atlantic Slope, 208 to  
900 fathoms). — Pappenheim, Deutsch.  
Südpolar Exped., vol. 15, pt. 2, 1914, p. 182  
(S.  $8^{\circ}$  to  $35^{\circ}$  or N.  $0^{\circ}$  to  $46^{\circ}$  E.  $2^{\circ}$  to  $11^{\circ}$  or  
W.  $6^{\circ}$  to  $34^{\circ}$ , 1000 to 3000 meters). — Jespersen,  
Rep. Danish Oceanogr. Exped. Medit., no. 3,  
vol. 2, A. 2, April 15, 1915, p. 7. — Roule,



Argyropelecus hemigymnus Cocco

Argyropelecus hemigymnus Cocco,

Archiv. R. Acad. Peloritano, 1829, p. 146.

Messina. — Günther, Cat. Fishes Brit. Mus.,

vol. 5, 1865, p. 385 (Messina; Mediterranean);

Rep. Voy. Challenger, vol. 22, 1887, p. 167.

(between Shetland and Faroe Islands).

— Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 8,

1891, p. 126 (Bay of Bengal, in 1803 fathoms);

— Goode and Bean, Oceanic Ichth., 1895, 126, pl. 37 (not fig. 147) (Atlantic). — Alcock,

Journ. Asiatic Soc. Bengal, vol. 65, pt. 2,

1896, p. 331 (reference); Cat. Deep Sea Fishes

Indian Mus., 1899, p. 135 (Bay of Bengal material).

— Brauer, Deutsch. Tiefsee Exped. Valdivia,

vol. 5, Tiefsee-fische, 1905, p. 106, text fig.

45 (west of Cape Colony; Bay of Bengal;



Rés. Camp. Sci. Monaco, vol. 52, 1919,  
p. 25 (between São Miguel and Terceira,  
Azores, 992 meters; Gulf of Gascony;  
Cape Finisterre, 3500 meters; between  
Portugal and Azores, 2100 meters; Azores,  
2600 meters). — Vaillant, Rés. Camp. Sci.  
Monaco, vol. 52, 1919, p. 129 (N.  $34^{\circ}32'8''44'$   
 $45''$ ; N.  $43^{\circ}52'W. 9^{\circ}5'45''$ , 1674 meters; N.  
 $37^{\circ}54'W. 24^{\circ}43'15''$ ; N.  $38^{\circ}30'35''W. 28^{\circ}16'20''$ ,  
349 meters; N.  $32^{\circ}36'W. 14^{\circ}27'15''$ ). — Barnard,  
Ann. South African Mus., vol. 21, June 1925,  
p. 153 (off Cape Point, 156 to 630 fathoms).  
— Jespersen and Taaning, Rep. Danish  
Oceanogr. Exped. Medit., no. , vol. 2, A.12,  
1908-10, p. 48. — Horman, Discovery Rep.,

571 (Italy). — Holt and Byrne, Rep.  
Agric. Techn. Instruct. Ireland, Sci.  
Invest., No. 1, 1913, p. 21, figs. 7b-8  
(Irish Atlantic Slope, 208 to 900 fathoms).

vol. 2, 1930, p. 303, pl. 2, fig. 4 (S.  $24^{\circ}$   
to  $35^{\circ}$  W.  $1^{\circ}$  to  $13^{\circ}$  E.  $4^{\circ}$  to  $15^{\circ}$ ; 250 to 2500  
meters).



Gonostoma rhodadenia (Gilbert)

Cyclothone rhodadenia Gilbert, Bull.

U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905),  
p. 602, pl. 71, fig. 1. Kaiwi Channel, in  
411 to 442 fathoms; off Kauai, in 409 to  
550 fathoms.

Gonostoma rhodadenia Weber, Siboga

Exped., vol. 57, Fische, 1913, p. 18 (Ceram  
Sea, in 1914 meters). — Weber und Beaufort,  
Fishes Indo Austral. Archipelago, vol. 2,  
1913, p. 121 (above materials). — Fowler,  
Mem. Bishop Mus., vol. 10, 1928, p. 34 (compiled).

Cyclothone polyphos Jugmayer, Bull. Inst.

Océanogr. Monaco, no. 193, ann. 20, 1911, p. 4. h.  
Lat.  $36^{\circ} 7'$  W. Long.  $10^{\circ} 18'$ , in 4740 meters; h. Lat.  
 $36^{\circ} 6'$  W. Long. 9, in 3660 meters. (Off Portugal.)

between New Amsterdam and Sumatra;  
 between Ceylon and Chagos Archipelago;  
 between Chagos Archipelago and Zanzibar;  
 in 1500 to 2400 meters).

Sternoptyx hemigymnus Valenciennes, Règne Animal,  
 Ill. Poiss., 1839, pl. 103, fig. 3.

Salmo gasteropelecus (not Pallas) Faujat, Ann.  
 Mus. Hist. Nat. Paris, vol. 8, 1806, p. 370  
 (Spezzia).

Argyrops argyrops d'urvillei Valenciennes, Hist. Nat.  
 Poiss., vol. 22, 1849, p. 405. Mid Atlantic. —  
Günther, Cat. Fishes Brit. Mus., vol. 5, 1864, p.  
 386 (copied).

? Argyrops argyrops intermedius Clarke, Tr. Proc. New Zealand Inst.,  
 vol. 23, pt. 1, 1903 (1905), p. 601, pl. 72, fig. 1.

Argyrops argyrops heathi Gilbert, Bull. U.S.  
 Fish Comm., vol. 23, 1903 (1905), p. 601, pl. 72,

fig. 1. Kaiwi Channel, between Maui and  
 Molokai, in 350 to 355 fathoms. — Fowler,  
 Mem. Bishop Mus., vol. 10, 1928, p. 35  
 (Alika, Hawaii).



between New Amsterdam and Sumatra;  
 between Ceylon and Chagos Archipelago;  
 between Chagos Archipelago and Zanzibar;  
 in 1500 to 2400 meters).

→ Sternoptis mediterranea Cocco, <sup>Messina</sup> Ass. pesci,  
 (Il Faro, vol. 4), anno 6, 1838, p. 7, fig. 2.  
 Messina.

→ Argyropelecus alcocki Goode and Bean,  
 Oceanic Ichth., 1895, p. 126 (name based  
 on Alcock's 1891 record).

Argyropelecus heathi Gilbert, Bull. U.S.  
 Fish Comm., vol. 23, 1903 (1905), p. 601, pl. 72,  
 fig. 1. Kaiwi Channel, between Maui and  
 Molokai, in 350 to 355 fathoms. — Fowler,  
 Mem. Bishop Mus., vol. 10, 1928, p. 35  
 (Alika, Hawaii).



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~~Argyropelecus intermedius Clarke~~

? Argyropelecus intermedius Clarke, Trans.  
New Zealand Inst., vol. 10, 1877 (1878), p.  
244, pl. 6 (upper figures). Hokitika.

— White, Records Canterbury Mus., vol. 1,  
no. 1, Apr. 25, 1907, p. 11 (reference).

Depth  $1\frac{2}{5}$  to 2; head  $2\frac{3}{4}$  to  $3\frac{1}{8}$ , width  
 $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout 3 to  $3\frac{2}{3}$  in head from  
snout tip; eye 2 to  $2\frac{1}{2}$ , greatly exceeds  
snout or very narrow interorbital;  
maxillary vertically inclined, reach  $\frac{1}{2}$   
in eye, expansion  $1\frac{1}{3}$  to  $1\frac{3}{5}$  in eye,  
length 1 to  $1\frac{1}{5}$  in head from snout tip;  
interorbital narrowly constricted bony  
ridge, very slender. Gill rakers

11+12, slender,  $1\frac{1}{5}$  in eye; gill filaments 3 in eye.

Preorbital photophore close below nostrils; 1 on cheek close above angle of preopercle ridge; 2 operculars, upper level with lower portion of orbit, lower close above and behind preopercle angle. Upper lateral photophores 8, second highest or little above lower opercular, third graduated up to eighth which at same level as first or both level with lower opercular; lower or ventral series 6 on isthmus before pectoral fin, 12 abdominals between pectoral and ventral bases, of which 2 before pectoral base,

4 between ventral and anal, 6 over anal base and 4 at bases of lower rudimentary caudal rays.

D. VI to X, 7 to 10, first flexible ray 2 to  $2\frac{1}{5}$  in total head length; A. 10 or 11, third ray  $1\frac{7}{8}$  to 3; caudal  $1\frac{1}{5}$ , well forked; least depth of caudal peduncle 3 to 4; pectoral  $1\frac{1}{10}$  to  $1\frac{1}{5}$ ; ventral  $2\frac{2}{5}$  to  $2\frac{1}{2}$ .

Largely bright silvery white. Back and upper surfaces usually with brownish. Iris gray white. Fins whitish. Atlantic, Pacific and Indian Oceans.



10143 U.S.N.M. Mediterranean.

C.L. Bonaparte. Academy Nat. Sci.

Philadelphia. Length 32 or 33 mm.,  
without broken caudals.

40053 U.S.N.M. Italy. Florence

Museum. Length 26 to 34 mm. 18 examples.

51632 U.S.N.M.

Hawaiian Islands. Albatross Station 4107.  
Length 35 mm. Type of Argyropelecus  
heddithi.

92244 U.S.N.M. Straits of Messina.

Milan Museum. Length 46 to 50 mm.  
2 examples.

8 examples. ~~to~~

A.N.S.P. Italy.

C.L. Bonaparte 455. Dr. J.B. Wilson.  
Length 25 to 46 mm. ~~8 examples.~~

Argyropelecus aculeatus Valenciennes

Argyropelecus aculeatus Valenciennes,  
Hist. Nat. Poiss., vol. 22, 1849, p. 406.

Azores. — Günther, Cat. Fishes Brit. Mus.,  
vol. 5, 1864, p. 386 (copied). — Sauvage,

Hist. Nat. Madagascar, Poiss., 1891, p. 483,  
pl. 48, fig. 5 (Réunion). — Lütken, Kon.

Dansk. Vidensk. Selsk. Skr. København,  
ser. 6, vol. 7, 1892, p. 282 (S. 32° E, 44° 10',

Indian Ocean). — Goode and Bean,

Oceanic Ichth., 1895, p. 127 (compiled). —

— Collett, Vidensk. Selsk. Forhandl.

Christiania, 1903, no. 9, p. 108 (Azores);

Zool. Anzeiger, vol. 28, 1905, p. 726

(Azores). — Branner, Deutsch. Tiefsee Exped.

Valdivia, vol. 15, Tiefsee - Fische, 1906,  
p. 110, text fig. 47 (Collett's example). —  
Regan, Trans. Linn. Soc. London, ser. 2,  
vol. 12, Zool., 1908, p. 219 (diagnosis in key).  
— Murray and Hjort, Depths of the  
Ocean, 1912, p. 612 (Gibraltar to Gran  
Canaria, thence to Cape Bojador, Gran  
Canaria to Fayal, Azores to Newfoundland,  
1215 to 2865 meters). — Jespersen, Rep.  
Danish Oceanogr. Exped. Medit., ~~etc.~~,  
vol. 2, A. 2, 1908-10, p. 27. — Norman,  
Discovery Rep., vol. 2, 1930, p. 303 (S.  
34° to 35° E. 10° to 16°, 250 to 1000 meters).



? Argyropelecus acanthurus Cocco,  
Giorn. Sci. Sicilia, vol. 26, 1829, no.  
77. Messina; Isis, vol. 24, 1831, p. 1342  
(Messina).

Sternoptyx acanthurus Valenciennes, Hist.  
Nat. Poiss., vol. 22, 1849, p. 408 (reference).

Sternoptychides amabilis Ogilby, Proc. Linn.  
Soc. New South Wales, ser. 2, vol. 3, 1888.  
(1889), p. 1313. Lord Howe Island.

Argyropelecus amabilis McCulloch, Records  
Australian Mus., vol. 14, 1923, p. 118, pl. 14, fig.  
3.

? Argyropelecus caninus Garman, Mem. Mus.  
Comp. Zool., vol. 24, 1899, p. 235. Indian Ocean  
off Port Louis Harbor, Mauritius.

Argyropelecus offersii (not Cuvier) Collett,  
Arch. Math. Naturv. Christiania, vol. 19,  
1897, no. 7, p. 14 (Azores).

Argyroleleus aculeatus Valenciennes

Argyroleleus aculeatus Valenciennes,

Hist. Nat. Poiss., vol. 22, 1849, p. 406.

Azores. — Günther, Cat. Fishes Brit. Mus.,

vol. 5, 1864, p. 386 (copied). — Sauvage,

Hist. Nat. Madagascar, Poiss., 1891, p. 483,

pl. 48, fig. 5 (Réunion). — Goode and

Bean, Oceanic Ichth., 1895, p. 127 (compiled).

— Regan, Trans. Linn. Soc. London, ser. 2,

vol. 12, Zool., 1908, p. 219 (description in

key).

Argyroleleus acanthurus Valenciennes,

Hist. Nat. Poiss., vol. 22, 1849, p. 408.



Depth  $1\frac{1}{3}$ ; head  $2\frac{3}{4}$ . Snout 4 in head from snout tip; eye  $2\frac{1}{3}$ , greatly exceeds snout; maxillary extends  $1\frac{2}{5}$  eye diameters below eye, about opposite its center, expansion  $1\frac{2}{5}$  in eye, length subequal with head from snout tip; interorbital low.

Lateral photophores 8 between pectoral and ventral, second highest, first next in height, others subequally low. Ventral series 6 before pectoral, 12 between pectoral and ventral, 4 above ventral before anal, 6 above anal, 4 at lower base of caudal. One opercular spot below level of pupil.

D. VI, 9, sixth spine 2 in total head, fifth ray  $1\frac{4}{5}$ ; adipose fin  $1\frac{4}{5}$ ; A. I, 6 - I, 5, third branched ray  $2\frac{1}{2}$ ; caudal  $1\frac{2}{5}$ ; least depth of caudal peduncle 3; pectoral  $1\frac{1}{3}$ ; ventral  $3\frac{1}{4}$ .  
Length to 55 mm. (Norman.)

Atlantic Ocean.



Argyrops offersii (Cuvier)  
Sternoptix offersii Cuvier, Règne Animal,  
ed. 2, vol. 2, 1829, p. 316. Atlantic Ocean.

Sternoptyx offersii Lüben and Koren,  
Vet. Akad. Handlig. Stockholm, 1844,  
p. 80, pl. 3, fig. 6. — Hilsson, Skandinav.  
Fauna, Fisk., 1855, p. 486.

Argyrops offersii Valenciennes, Hist.  
Nat. Poiss., vol. 22, 1849, p. 408 (south east  
of Cape of Good Hope; between Canaries  
and Brazil). — Lowe, Proc. Zool. Soc.  
London. 1850. p. 247 (Madeira). — Collett,  
— Bleeker, Naturk. Tijdschr. Nederl. Indie,  
vol. 21, 1860, p. 56 (reference). —  
Günther, Cat. Fishes Brit. Mus., vol. 5, 1865,  
p. 386 (compiled).

Mag. Naturv. Christiania, vol. 29, 1884, p.

Argyroleleucus offersii (Cuvier)  
Sternoptix offersii Cuvier, Règne Animal,  
 ed. 2, vol. 2, 1829, p. 316. Atlantic Ocean.

Sternoptyx offersii Düben and Koren,  
 Vet. Akad. Handl. Stockholm, 1844,  
 p. 80, pl. 3, fig. 6. — Hilsson, Skandinav.  
 Fauna, Fisk., 1855, p. 486.

Argyroleleucus offersii Valenciennes, Hist.  
 Nat. Poiss., vol. 22, 1849, p. 408 (south east  
 of Cape of Good Hope; between Canaries  
 and Brazil). — Lowe, Proc. Zool. Soc.  
 London, 1850, p. 247 (Madeira). — Collett,  
 Forhand. Vid. Selsk. Christiania, 1874,  
 Tillægsh., p. 149; 1879, no. 1, p. 84; Nyt  
 Mag. Naturv. Christiania, vol. 29, 1884, p.



~~Sternoptychides amabilis Ogilby~~

Sternoptychides amabilis Ogilby, Proc. Linn.  
Soc. New South Wales, ser. 2, vol. 3, 1888  
(1889), p. 1313. Lord Howe Island.

? Argyropelecus caninus Garman, Mem.  
Mus. Comp. Zool., vol. 24, 1889, p. 235.



102 (Norway) ✓ — Lilljeborg, *Sveriges*  
 — Günther, Rep. Voy. Challenger, vol. 22, 1887,  
 p. 167 (off Cape Finisterre). — Vaillant,  
 Exped. Sci. Travailleur et Talisman; Poiss.,  
 1888, p. 104 (off Portugal, 950 to 1615 meters).

1892, p. 282 (N.  $43^{\circ}47'$  W.  $23^{\circ}27'$ ). —

Vinciguerra, Atti Soc. Ital. Sci. Nat.,  
 vol. 34, 1892, p. 331 (Canaries). —

Smitt, Hist. Scandinavian Fishes, vol. 2,

1895, p. 925, fig. 233. — Goode and Bean,

Oceanic Ichth., 1895, p. 126, pl. 39, fig. 148a

(N.  $36^{\circ}$  to  $42^{\circ}$  W.  $16^{\circ}$  to  $74^{\circ}$ , 144 to 2069 fathoms;

Grand Banks). — Regan, Trans. Linn. Soc.

London, ser. 2, Zool., vol. 12, 1908, p. 219

(diagnosis in key). — Horman, Discovery Rep.,  
 vol. 2, 1930, p. 304, fig. 12 (S.  $00^{\circ}46'F$   $5^{\circ}49'15''$ ,  
 850 to 950 meters).

102 (Norway) ✓ — Lilljeborg, Sveriges  
Norg. Fauna, Fisk., vol. 3, 1891, p.  
3. — Lütken, Kon. Dansk. Vidensk.  
Selsk. Skrift. København, ser. 6, vol. 7,  
1892, p. 282 (N.  $43^{\circ} \frac{1}{2}$  to  $47^{\circ}$  W.  $23^{\circ}$  to  $27^{\circ}$ ). —  
Vinciguerra, Atti Soc. Ital. Sci. Nat.,  
vol. 34, 1892, p. 331 (Canaries). —  
Smitt, Hist. Scandinavian Fishes, vol. 2,  
1895, p. 925, fig. 233. — Goode and Bean,  
Oceanic Ichth., 1895, p. 126, pl. 39, fig. 148a  
(N.  $36^{\circ}$  to  $42^{\circ}$  W.  $16^{\circ}$  to  $74^{\circ}$ , 144 to 2069 fathoms;  
Grand Banks). — Regan, Trans. Linn. Soc.  
London, ser. 2, Zool., vol. 12, 1908, p. 219  
(diagnosis in key). — Horman, Discovery Rep.,  
vol. 2, 1930, p. 304, fig. 12 (S.  $00^{\circ} 46' E$  to  $5^{\circ} 49' 15''$ ,  
850 to 950 meters).



- Argyropelecus offersi Collett, Rés. Camp. Sci. Monaco, vol. 10, 1896, p. 127, pl. 3, fig. 14 (between Graciosa and Fayal, Azores). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 604 (compiled). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-Fische, 1906, p. 108, text fig. 46 (Gulf of Guinea; between New Amsterdam and Sumatra; south of Ceylon; west of Chagos Archipelago). — Murray and Hjort, Depths of the Ocean, 1912, p. 612 (Plymouth to Gibraltar, thence to Gran Canaria, thence to Fayal, Newfoundland to Glasgow, 1215 to 4700 meters). — Dep. Agric. Techn. Instruct. Ireland, Sci. Invest., no. 1, 1913, p. 20 (Irish Atlantic Slope, 380 to 700 fathoms). — Weber, Siboga Exped., vol. 57, Fische, 1913, p. 21



Argyropelecus offersi Collett, Rés. Camp.  
Sci. Monaco, vol. 10, 1896, p. 127, pl. 3, fig. 14  
(between Graciosa and Fayal, Azores).  
— Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 604 (compiled).  
— Brauer, Deutsch. Tiefsee Exped. Valdivia,  
vol. 5, Tiefsee-Fische, 1906, p. 108, text fig.  
46 (Gulf of Guinea; between New Amsterdam  
and Sumatra; south of Ceylon; west of Chagos  
Archipelago). — Jugmayer, Rés. Camp. Sci.  
Monaco, vol. 35, 1911, p. 52 (N.  $43^{\circ}4'30''$  W.  $19^{\circ}$   
 $42'$ ; N.  $44^{\circ}19'$  W.  $11^{\circ}19'$ , 4900 meters; N.  $37^{\circ}38'$   
W.  $10^{\circ}53'$ , 4900 meters). — Holt and Byrne,  
Rep. Agric. Techn. Instruct. Ireland, Sci.  
Invest., no. 1, 1913, p. 20 (Irish Atlantic  
Slope, 380 to 700 fathoms). — Weber,  
Siboga Exped., vol. 57, Fische, 1913, p. 21

<sup>4</sup>Family Sternoptychidae

(Banda Sea, 2798 meters). — Weber and Beaufort, Fishes Indo Austral. Archipelago, vol. 2, 1913, p. 134, fig. 49 (Banda material). — Jespersen, Rep. Danish Oceanogr. Exped. Medit., no. 3, vol. 2, A. 2, April 5, 1915, p. 23. — Roule, Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 25 (south east of Pico, between Pico and São Jorge, Princess Alice Bank, Cape Finisterre, between Portugal and Azores, off Azores, 0 to 3500 meters). — Vaillant, Rés. Camp. Sci. Monaco, vol. 52, 1919, p. 129 ( $N. 36^{\circ} 54' W. 20^{\circ} 46' 15''$ ;  $N. 38^{\circ} 53' W. 26^{\circ} 40' 45''$ , 1935 meters). — Barnard, Ann. South African Mus., vol. 21, June 1925, p. 153 (off Cape Point, 460 fathoms).



Gonostoma gracile Günther

Gonostoma gracile Günther, Ann. Mag. Nat. Hist., London, ser. 5, vol. 2, 1878, p. 187.

South of Japan, 345 and 2425 fathoms;  
Rep. Voy. Challenger, vol. 22, 1887, p. 174, pl. 45,  
fig. C (types).

Argyropelecus lychnus Garman,  
Mem. Mus. Comp. Zool., vol. 24,  
1899, p. 234, pl. V, figs. 1-6. 5.  
0° to 10° W. 78° to 96°, 286 to 2232  
fathoms, Gulf of Panama. —

Parr, Bull. Bingham Oceanogr.  
Collection, vol. 2, art. 4, Oct. 1931,  
p. 17, fig. 5 (abdominal spines)  
(N. 24° 7' W. 108° 40', 286 fathoms;  
N. 14° 30' 30" W. 96° 14', 625 fathoms;  
N. 11° 5' W. 89° 20' 45", 300 fathoms).



moderately emarginate; least depth of caudal peduncle  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{3}{4}$ ; pectoral  $2\frac{2}{5}$  to  $2\frac{4}{5}$  in combined head and body to caudal base.

Back nearly burnt umber till level with eye, below paler or whitish. Each scale on back with pale gray white basal spot. Head paler or with drab shades on preorbital, cheek and opercles, lower surfaces all dull brownish; everywhere variable small ocelli, sometimes as short bars or arcs, but always with slightly darker brown border; on front take form of transverse bluish lines, but no markings on under surface of head. Iris yellowish brown. Back with 3 or 4 series of underlaid pale ovoid spots. Spinous dorsal dusky, mottled with ill defined



Argyropsleucus lichnus Townsend and  
Nichols, Bull. Amer. Mus. Nat. Hist.,  
 New York, vol. 52, art. 1, May 16, 1925, p. 11  
 (off Lower California, 491 fathoms).

Argyropsleucus caninus Garman, Mem.  
 Mus. Comp. Zool., vol. 24, 1899, p. 235.  
 Off Port Louis Harbor, Mauritius.

Depth  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; head  $2\frac{4}{5}$  to 3,  
 width  $1\frac{3}{4}$  to 2. Snout  $2\frac{4}{5}$  to  $3\frac{1}{5}$  in  
 head from snout tip; eye  $2\frac{1}{5}$  to 3,  
 greatly exceeds snout or narrow  
 interorbital; maxillary vertical,  
 reaches opposite front eye edge  
 to  $\frac{1}{2}$  in eye, expansion  $1\frac{2}{5}$  to 2 in  
 eye, length 1 in head from snout

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tip; interorbital 3 in eye, rather low, with deep median groove. Gill rakers  $6 + 10$ , lanceolate, slender,  $1\frac{1}{4}$  in eye; gill filaments  $\frac{2}{3}$  gill rakers.

Preorbital photophore below nostrils; 1 veiled on cheek just above angle of preopercle, angle or little above lower eye edge, lower larger just above and close behind preopercle angle; 6 branchiostegals. Lateral series of photophores 8, second highest or level with lower opercular, first little lower or above pectoral fin origin, then others all

graduated lower to eighth; lower  
or ventral series as 6 on isthmus,  
12 abdominals to ventral of which 1  
or 2 before pectoral origin, 4 between  
ventral and anal, 6 above anal  
base and 4 on lower surface of  
caudal peduncle

D. VII or VIII, 9, first flexible ray  
2 to  $2\frac{1}{4}$  in total head length; A.  
II, 10 or II, 11, first flexible ray 2 to 3;  
caudal 1 to  $1\frac{1}{8}$ , widely emarginate;  
least depth of caudal peduncle  $2\frac{1}{8}$  to  $2\frac{1}{2}$ ; pectoral  
 $1\frac{1}{5}$  to 2; ventral 3 to  $3\frac{1}{4}$ .

Largely brilliant silvery white.  
Back and upper surface of head



brown. Iris gray to silvery white.  
Fins all whitish.

Atlantic, Pacific and Indian Oceans.

3711. D. 5387. Bagatao Island Light  
(outer), S.  $80^{\circ}$  E., 27 miles (N.  $12^{\circ} 54' 40''$   
E.  $123^{\circ} 20' 30''$ ), between Burias and  
Luzon. In 209 fathoms. March 11, 1909.  
Length 35 mm.

4447. D. 5525. Balicasag Island  
(C.), N.  $11^{\circ}$  W., 8.2 miles (N.  $9^{\circ} 12' 30''$  E.  $123^{\circ}$   
 $44' 7''$ ), between Siquijor and Bohol.  
In 405 fathoms. August 11, 1909.  
Length 45 mm.

D. 5530. Balicasag Island (C.), N.  
 $32^{\circ}$  E., 4.3 miles (N.  $9^{\circ} 26' 45''$  E.  $123^{\circ} 38' 30''$ ),  
between Siquijor and Bohol. ~~Same~~  
August 11, 1909. Length 15 mm.

D. 5497. Bantigue Island, N.  $64^{\circ}$  W.,  
10 miles (N.  $9^{\circ} 7' 15''$  E.  $124^{\circ} 59' 30''$ ),  
between Leyte and Mindanao. In 960  
fathoms. August 3, 1909. Length 18 to 27  
mm. 4 examples.

D. 5437. Hermana Mayor Light,  
 N.  $69^{\circ}$  E., 4.9 miles (N.  $15^{\circ} 45' 54''$   
 E.  $119^{\circ} 42' 45''$ ), west coast of Luzon.  
 May 8, 1909. Length 13 or 14 mm.  
 2 examples.

D. 5457. Legaspi Light, S.  $60^{\circ}$  W., 5  
 miles (N.  $13^{\circ} 12' 12''$  E.  $123^{\circ} 49' 40''$ ), east  
 coast of Luzon. In 146 fathoms.  
 June 8, 1909. Length 20 mm.

D. 5246. Luban Island (N.), S.  $58^{\circ}$  W.,  
 4.6 miles (N.  $6^{\circ} 29' 15''$  E.  $126^{\circ} 18' 45''$ ),  
 Pacific Ocean east of Mindanao. May 15,  
 1908. Length 23 mm.

D. 5184. Lusaran Light, <sup>N.  $22^{\circ}$  E., 11.25</sup>  
~~S.  $22^{\circ}$  E., 11.25~~  
 miles (N.  $10^{\circ} 18' 30''$  E.  $122^{\circ} 23' 30''$ ), between  
 Panay and Negros. In <sup>565</sup>~~415~~ fathoms.  
 March 30, 1908. Length 19 to 20 mm. ~~2 examples.~~  
 2 examples.

D. 5185. Lusaran Light, N.  $23^{\circ}$  E., 25.50  
 miles (N.  $10^{\circ} 5' 45''$  ~~E.~~ E.  $122^{\circ} 18' 30''$ ), between  
 Panay and Negros. In 638 fathoms.  
 March 30, 1908. Length 15 mm. Poor  
 example.



1906, p. 108, text fig. 46 (Gulf of Guinea;  
between New Amsterdam and Sumatra;  
south of Ceylon; west of Chagos Archipelago).

— Weber, Siboga Exped., vol. 57, Fische,  
1913, p. 21 (Banda Sea, in 2798 meters).

— Weber and Beaufort, Fishes Indo Austral.  
Archipelago, vol. 2, 1913, p. 134, fig. 49  
(Banda Sea material).

Argyrops leucus lychnus Garman, Mem.  
Mus. Comp. Zool., vol. 24, 1899, p. 234, pl.  
I, figs. 1-6. S. Lat.  $0^{\circ}$  -  $10^{\circ}$  W. Long.  $78^{\circ}$  -  $96^{\circ}$ ,  
in 286 to 2232 fathoms. (Gulf of Panama.)

— leucus caninus Garcero, Mem.  
vol. 2, art. 4, ser. 1731, p. 17, fig. 5 (abdominal sp.)  
286 fathoms; N.  $14^{\circ}30'30''$  W.  $96^{\circ}14'$ , 625 fathoms; N.  $14^{\circ}5'$  W.  $89^{\circ}20'45''$ , 300 fathoms).  
(N.  $24^{\circ}7'W.$  4.



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D. 5500. Macabalan Point Light  
(Mindanao), S.  $20^{\circ}$  E., 7.9 miles (N.  
 $8^{\circ} 37' 45''$  E.  $124^{\circ} 36' 45''$ ), northern  
Mindanao and vicinity. In 267 fathoms.  
August 4, 1909. Length 11 to 25 mm.  
37 examples.

D. 5125. Hogas Island (W.), S.  $11^{\circ}$  E.,  
24 miles (N.  $10^{\circ} 48'$  E.  $121^{\circ} 48' 30''$ ), Sulu  
Sea vicinity southern Panay. In 411  
fathoms. February 3, 1908. Length  
11 mm. 2 examples, in very poor condition.

D. 5227. Point Orizon, S.  $44^{\circ}$  E., 18.30  
miles (N.  $12^{\circ} 53' 45''$  E.  $121^{\circ} 52' 30''$ ), east of  
Mindoro. In 322 fathoms. May 5, 1908.  
Length 11 or 12 mm. 2 examples, in very  
poor condition.

3061. D. 5447. San Miguel Point,  
S.  $7^{\circ}$  W., 3.5 miles (N.  $13^{\circ} 28'$  E.  $123^{\circ} 46' 18''$ ),  
east coast of Luzon. In 310 fathoms.  
June 4, 1909. Length 43 mm.

D. 5120. Sombrero Island, S.  $79^{\circ} 30'$  E.,  
19.2 miles (N.  $13^{\circ} 45' 30''$  E.  $120^{\circ} 30' 15''$ ),  
Balayan Bay and Verde Island Passage. In 393  
fathoms. January 21, 1908. Length 15 to 20 mm.  
2 examples.

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4804 and 4805, D. 5368. Jayabas  
Light (outer), N.  $32^{\circ}$  W., 21.8 miles  
(N.  $13^{\circ}35'30''$  E.  $121^{\circ}48'$ ), Marinduque  
Island and vicinity. In 181 fathoms.  
February 23, 1909. Length 32 to 41 mm.

33296 U.S.N.M. N.  $39^{\circ}40'W$ .  $68^{\circ}28'30''$ .  
In 1467 fathoms. Albatross Station  
2043. Length 60 mm.

33393 U.S.N.M. N.  $41^{\circ}40'30''W$ .  $65^{\circ}35'$ .  
In 855 fathoms. Albatross Station 2075.  
Length 41 mm.

33495 U.S.N.M. N.  $42^{\circ}22'W$ .  $66^{\circ}23'$ . In  
144 fathoms. Albatross Station 2063.  
Length 23 mm.

35467 U.S.N.M. N.  $39^{\circ}44'W$ .  $70^{\circ}3'$ . In  
1058 fathoms. Albatross Station 2195.  
Length 42 mm.

35534 U.S.N.M. N.  $39^{\circ}33'71''W$ .  $16^{\circ}15'$ .  
In 1178 fathoms. Albatross Station 2208.  
Length 41 to 46 mm. 2 examples.



35561 U.S.N.M. N.  $39^{\circ}34'45''$  W.  $71^{\circ}21'30''$ . In 1080 fathoms. Albatross Station 2209. Length 38 mm.

38116 U.S.N.M. Grand Banks. W. A. Wilcox. Length 45? mm.

38211 U.S.N.M. N.  $36^{\circ}30'$  W.  $74^{\circ}33'$ . In 859 fathoms. Albatross Station 2728. Length 64 mm.

57885 U.S.N.M.  
Albatross Station 3360 and 3392.  
Length 28 to 56 mm. As Argyropelecus  
lychnus.

74336 U.S.N.M.  
Albatross Station 2565. Length 38 mm.

86124 U.S.N.M.  
Gulf of Mexico. Grampus Station 10445.  
In 300 meters. January 25, 1917.  
Length 16 to 20 mm, 2 examples.



Argyrops sladeni Regan

Argyrops sladeni Regan, Trans.

Linn. Soc. London, ser. 2, vol. 12, Zool.

No. 14, 1908, p. 218. Chagos Archipelago,  
Salomon, in 400 to 500 fathoms. —

Horman, Discovery Rep., vol. 2, 1930, p. 304,  
fig. 13 (S.  $0^{\circ}$  to  $15^{\circ}$  E  $10^{\circ}$  to  $11^{\circ}$  or W.  $0^{\circ}$  to  $20^{\circ}$ ,  
125 to 700 meters).

Depth  $1\frac{2}{3}$  to  $1\frac{4}{5}$ ; head  $2\frac{7}{8}$  to  $3\frac{1}{8}$ .

Snout 3 to  $4\frac{1}{4}$  in head from snout tip;  
eye  $2\frac{1}{2}$  to  $2\frac{3}{4}$ , exceeds snout; maxillary  
extends  $1\frac{1}{3}$  to  $1\frac{4}{5}$  eye diameters below  
eye, reaches opposite eye center, expansion  
 $1$  to  $1\frac{2}{3}$  in eye, length  $1$  to  $1\frac{1}{5}$  in head  
from snout tip; upper preopercular

spine small, well developed, directed outwards and backwards, lower more or less straight.

One opercular photophore close above <sup>level of</sup> lower orbital edge. Lateral series 8, second highest, first next and others subequally low. Ventral series 6 on isthmus, then 2<sup>or 3</sup> before pectoral continuous with 9 or 10 to ventral, 4 between ventral and anal, 6 above anal and 4 at lower caudal base.

Predorsal spines 6, graduated up to last which  $3\frac{1}{2}$  to 4 in total head length; D. I, 8, third branched ray 2 to  $2\frac{1}{4}$ ; adipose fin low, length  $1\frac{1}{3}$  to  $1\frac{1}{2}$ ; A. I, 10, second branched ray  $3\frac{1}{4}$  to  $3\frac{1}{4}$ ; caudal  $1\frac{1}{8}$ ; least depth of caudal peduncle  $2\frac{4}{5}$ ; pectoral  $1\frac{1}{10}$ ; ventral 3.

Length 28 mm.

(Norman.)

North and South Atlantic, Antarctic and Indian Oceans.



Genus Polyipnus Günther

Polyipnus Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 170. Type Polyipnus spinosus Günther, monotypic.

Snout very short. Eye large. Mouth cleft vertical, rather small, bordered above by slender premaxillaries, which followed by posteriorly expanded maxillaries. Mandible received within upper jaw. Bands of minute teeth on premaxillaries and mandible, in series on maxillary. Similar teeth on vomer. Preopercular spine strong. Spiny ridges on head and belly. Gill rakers rather long.



Gill opening wide, membranes free from isthmus, delicately united. Branchiostegals 9 to 11.

Body covered with large, extremely thin, deciduous scales. Luminous organs before, behind and below eye, on opercle, between branchiostegals, in groups along isthmus, ventral edge, between ventral and anal, above and behind anal, above and behind pectorals. Dorsal origin nearly median. Adipose fin low. Anal begins at last third in

Subgenus Polyipinus Günther

Spines on head short or obtuse,  
little developed. Photophores large  
and conspicuous.

Polyipnus tridentifer Mc Culloch

Polyipnus tridentifer Mc Culloch,

Biol. Results Endeavour, vol. 2, pt. 3,

July 3, 1914, p. 87, pl. 16, fig. 4, text fig. 4.

Great Australian Bight, in 350 to 450 fathoms. — Waite, Records South Austral.

Mus., vol. 2, no. 1, 1921, p. 43, fig. 63.

Polyipnus spinosus (not Günther)

Barnard, Ann. South African Mus., vol. 21, June 1925, p. 155 (part).

Depth  $1\frac{3}{4}$ ; head  $2\frac{3}{4}$ . Snout  $4\frac{1}{2}$  in head from snout tip; eye 2, greater than snout; maxillary extends  $\frac{2}{3}$  an eye diameter below eye, <sup>reaches</sup> opposite front eye edge, expansion  $1\frac{4}{5}$  in eye, length  $1\frac{1}{4}$  in head from snout tip; jaws with anterior teeth granular exteriorly, premaxillaries with depressible biserial teeth anteriorly; several irregular



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rows of small depressible teeth on vomer; 1 or 2 small teeth on front end of palatines; strong spine at preopercle angle; post-temporal end in 3 very large spines each side, upper longest and lower bent downward. Lower gill rakers 12, slender.

Below eye on cheek luminous organ large as pupil. Upper opercular photophore close behind hind eye edge medially, lower spot little above and behind preopercle angle.

Lateral series 7, third and seventh highest or extend trifle above level of luminous body on cheeks, second next, then others all gradually smaller from first, fourth until sixth. Lower or ventral series 6 or 7 on isthmus, 10 from isthmus to ventral of which 3 before pectoral fin, 5 between ventral and anal, then level with third and seventh laterals 20 to caudal base (of which 13 over anal).

D. III, 11, first branched ray 2 in total head length; adipose

fin low, length  $4\frac{3}{4}$ ; A. III, 14,  
first branched ray  $2\frac{1}{6}$ ; caudal  
 $1\frac{1}{3}$ ; least depth of caudal  
peduncle  $3\frac{4}{5}$ ; pectoral  $1\frac{2}{5}$ ; ventral  
 $2\frac{2}{3}$ .

Back blackish brown, with  
minute darker specks. Small  
black triangle descends until level  
with upper edge of pupil. Small  
iridescent blackish spot before  
eye and upper part of opercle  
black. Eye brownish black, pupil  
surrounded by golden ring.  
Photophores strongly defined with  
black.

Length 93 mm. (McCulloch.)

Great Australian Bight.



Polyipnus stereope Jordan and Starbuck  
Polyipnus stereope Jordan and Starbuck,  
 Bull. U. S. Fish Comm., vol. 22, 1902  
 (1904), p. 581, pl. 2, fig. 3. Sagami Bay,  
 Japan.

Polyipnus spinosus (not Günther) Barnard,  
 Ann. South African Mus., vol. 21, June  
 1925, p. 155 (part).

Depth  $1\frac{3}{5}$ ; head  $2\frac{4}{5}$ , width  $1\frac{4}{5}$ .  
 Snout  $4\frac{1}{2}$  in head from snout tip;  
 eye  $2\frac{1}{8}$ , greatly exceeds snout or  
 interorbital; maxillary reaches  
 $\frac{1}{4}$  in eye, expansion  $1\frac{3}{4}$  in eye,  
 length  $1\frac{1}{4}$  in head from snout tip;  
 interorbital 4, rather low, depressed.



Gonostoma elongatum Günther

Gonostoma elongatum Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 2, 1878, p. 187.

South of New Guinea, in 800 fathoms;

Rep. Voy. Challenger, vol. 22, 1887, p. 173,

pl. 45, fig. B (type; off Banda, in 360 fathoms). — Alcock, Ann. Mag. Nat. Hist.,

ser. 6, vol. 8, 1891, p. 127 (near Laccadive Islands, in 738 fathoms); ser. 6, vol. 10,

1892, p. 354 (near Laccadives in 1200 fathoms);

Journ. Asiat. Soc. Bengal, vol. 65, pt. 2,

1896, p. 331 (compiled). — Branner, Deutsch.

Tiefsee Exped. Valdivia, vol. ,

Tiefsee-fische, 1906, p. 75, text fig. 27,

pl. 4, fig. 4 (Gulf of Guinea; west

and concave medially; opercular spine  $1\frac{3}{4}$  in eye. Gill rakers  $10 + 18$ , finely lanceolate, subequal with gill filaments or  $1\frac{3}{4}$  in eye.

Preorbital photophore opposite middle of front eye edge; cheeks with large photophore, nearly large as pupil, on lower limb of preopercle; 2 operculars, upper opposite middle of hind eye edge, lower just behind and above preopercle angle. Upper lateral series of photophores 8, first higher than others except third and seventh, third level with lower eye edge, fourth to sixth gradually lower with fourth

nearly level with lower opercular.  
 and sixth lower than first ventral,  
 seventh nearly level with third, eighth  
 little higher than lower opercular;  
 lower or ventral series as 6 on  
 isthmus, 10 abdominals before ventrals  
 of which 2 at least before pectoral  
 origin, 4 between ventral and anal,  
 17 from above front of anal to caudal  
 base.

D. 13, third ray  $2\frac{2}{3}$  in total  
 head length; adipose fin 3; A. 15,  
 fifth ray 5; caudal  $1\frac{3}{4}$ ?, damaged,  
 slightly emarginate behind; least  
 depth of caudal peduncle  $2\frac{3}{5}$ ;



pectoral  $1\frac{1}{5}$ ; ventral  $2\frac{1}{3}$ .

Back brown, with 2 narrow triangular brown points invading silvery white of side and extending at least to lateral line or level of lower pupil edge. Iris gray. Under surfaces of body with grayish about photophores. Fins whitish.

Japan. Closely related to Polyipnus spinosus differing in the dark triangles of the back extending down lower or to the lateral line. The occipital spines also shorter, not extending over  $\frac{1}{4}$  to soft dorsal origin.

In Polyipnus spinosus I find them variably extended much further or even quite to spine at front of dorsal.

Type.

pectoral  $1\frac{1}{5}$ ; ventral  $2\frac{1}{3}$ .

Back brown, with 2 narrow triangular brown points invading silvery white of side and extending at least to lateral line or level of lower pupil edge. Iris gray. Under surfaces of body with grayish about photophores. Fins whitish.

Japan. Closely related to Polyipnus spinosus, differing in the dark triangles of the back extending down lower or to the lateral line. The occipital spines also short, not extending over  $\frac{1}{4}$  to soft dorsal origin.

51451 U.S.N.M.

Sagami Bay, Japan. Albatross Station  
3698. Length 58? mm., caudal broken.  
Type.

Polipnus spinosus Günther

Polipnus spinosus Günther, Rep. Voy.

Challenger, vol. 22, 1887, p. 170, pl. 51, fig.

B. Between Philippines and Borneo in 250 fathoms, N. Lat.  $6^{\circ}47'E$ . Long.  $122^{\circ}28'$ . —

Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 4, 1889, p. 398 (Bay of Bengal; between north and south Sentinal Islands; in 220 to 240 fathoms); ser. 6, vol. 8, 1891, p. 126 (Station 115, in 188 to 220 fathoms). —

Goode and Bean, Oceanic Ichth., 1895, p. 128 (<sup>not</sup> pl. 39, fig. 148) (reference). — Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, 1896, p. 331 (off Andaman Islands, in 188 to 240 fathoms). — Gilbert and



Cramer, Proc. U. S. Nat. Mus., vol. 19, 1896, p. 416 (Hawaiian Islands, in 298 fathoms). — Alcock, Descr. Cat. Deep Sea Fishes Indian Mus., 1899, p. 137 (off Andaman Islands). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-fische, 1906, p. 120, text figs. 64-66, pl. 7, fig. 3 (west coast of Sumatra; north east coast of Africa; in 371 to 1362 meters). — Weber, Siboga Exped., vol. 57, Fische, 1913, p. 22 (Bali, Flores, Celebes Seas, Molucca Passage, Manipa Strait, Ceram, Banda, Timor Seas, in 828 to 2477 meters). — Weber and Beaufort, Fishes Indo-Austral Archipelago, vol. 2,

1913, p. 130, fig. 47 (Madura, Bali Sea,  
Macassar Strait, Molucca Passage,  
Arafura, Timor Sea, in 287 to 538 meters).

— Gilchrist and Von Bende, Fisher.  
Marine Biolog. Survey South Africa,  
Rep. no. 3, 1922 (1924), no. 7, p. 9 (off  
Cape Morgan and Natal Coast, 174 to 306  
fathoms). — Barnard, Ann. South African  
Mus., vol. 21, June 1925, p. 155, pl. 8, fig.  
2 (compiled).

Depth  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; head  $2\frac{3}{4}$  to  $2\frac{4}{5}$ , width  $1\frac{7}{8}$  to 2. Snout  $4\frac{1}{5}$  to  $4\frac{1}{2}$  in head from snout tip; eye 2 to  $2\frac{1}{10}$ , greatly exceeds snout or interorbital; maxillary vertical, reaches eye, expansion  $1\frac{3}{4}$  to  $1\frac{7}{8}$  in eye, length  $1\frac{1}{5}$  to  $1\frac{2}{5}$  in head from snout tip; interorbital 4 to 5, low, depressed medially; opercular spine half of eye. Gill rakers  $5 + 13$ , lanceolate, little longer than gill filaments or  $1\frac{2}{5}$  in eye.

Large luminous body on lower preopercle limb below eye, equally large as pupil; 2 operculars, upper opposite eye center, lower just above



level of preopercle angle; 5 branchiostegals.  
Upper laterals as 8, of which first  
above pectoral fin, second slightly  
higher, third level with lower eye  
edge, fourth to sixth slope down  
posteriorly all lower than first and  
second and sixth about level with  
pectoral fin origin, seventh level with  
third, eighth level with first; lower  
or ventral series 6 on interorbital  
before pectoral fin, 10 abdominal little  
before pectoral base to ventral origin,  
4 between ventral and anal, then 18  
from over anal origin to caudal.

D. II to V, 13 or 14, fifth flexible

ray 2 in total head; A. 16 or 17, third ray  $2\frac{3}{5}$  to  $2\frac{4}{5}$ ; caudal  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , well forked, lobes sharply pointed; least depth of caudal peduncle  $3\frac{1}{3}$  to  $3\frac{2}{3}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{3}{5}$ ; ventral  $2\frac{1}{3}$  to  $2\frac{4}{5}$ .

Largely brilliant silvery white. Back with dark brown of rather narrow extent and 2 dark brown triangles invading silvery white till level with upper eye edge. Fins whitish.

Indian and Pacific Oceans.

→  
↑ D. 5535. Apo Island (C.), S.  $24^{\circ}$  W., 17 miles (N.  $3^{\circ}20'35''$  E.  $123^{\circ}43'45''$ ), between Cebu and Sulu. In 3.6 fathoms. August 19, 1909. Length 57 to 75 mm. 17 examples.

57 to 85 mm. 5 examples.

3777. D. 5388. Bagatao Island Light (outer), S.  $86^{\circ}$  E., 21 miles (N.  $12^{\circ}51'30''$  E.  $123^{\circ}26'15''$ ), between Burias and Luzon. In 226 fathoms. March 11, 1909. Length 70 mm.

D. 5260. Balanja Point, N.  $28^{\circ}$  W., 7.20 miles (N.  $12^{\circ}25'35''$  E.  $121^{\circ}31'35''$ ), off southeastern Mindoro. In 234 fathoms. June 3, 1908. Length 48 to 78 mm. 80 examples.

4381. D. 5261. Balanja Point, N.  $80^{\circ}$  W., 6 miles (N.  $12^{\circ}30'55''$  E.  $121^{\circ}34'24''$ ), off southeastern Mindoro. In 145 fathoms. June 4, 1908. Length 40 mm.



→ 4149. D. 5537. Apo Island (C.), S. <sup>709</sup>  
46° W., 8.7 miles (N. 9° 11' E. 123° 23'),  
between Negros and Siquijor. In  
254 fathoms. August 19, 1909. Length  
57 to 85 mm. 5 examples.

3777. D. 5388. Bagatao Island.  
Light (outer), S. 86° E., 21 miles (N.  
12° 51' 30" E. 123° 26' 15"), between  
Bavias and Luzon. In 226 fathoms.  
March 11, 1909. Length 70 mm.

D. 5260. Balanja Point, N. 28° W.,  
7.20 miles (N. 12° 25' 35" E. 121° 31' 35"),  
off southeastern Mindoro. In 234  
fathoms. June 3, 1908. Length 48 to  
78 mm. 80 examples.

4381. D. 5261. Balanja Point, N.  
80° W., 6 miles (N. 12° 30' 55" E. 121° 34'  
24"), off southeastern Mindoro. In  
145 fathoms. June 4, 1908. Length  
40 mm.

Macolor vermicularis new species

depth  $2\frac{1}{5}$  to  $2\frac{2}{5}$ ; head  $2\frac{3}{5}$  to  $2\frac{2}{3}$ , width 2 to  $2\frac{1}{8}$ . Snout  $2\frac{1}{2}$  to  $3\frac{3}{5}$  in head from snout tip; eye  $3\frac{2}{5}$  to  $5\frac{1}{4}$ ,  $1\frac{1}{5}$  to 2 in snout,  $1\frac{1}{3}$  to  $2\frac{1}{8}$  in interorbital; maxillary reaches  $\frac{1}{4}$  to  $\frac{2}{5}$  in eye, expansion  $1\frac{2}{3}$  to  $2\frac{3}{4}$  in eye, length  $2\frac{1}{5}$  to  $2\frac{1}{4}$  in head from snout tip; teeth fine, in 7 or 8 irregular little defined rows in jaws, ~~with outer row slightly larger~~, though all more or less concealed in coriaceous lips; outermost row of teeth in each jaw little larger than any of others and with age directed outward, though basally also largely concealed by thick lips; small patch of fine teeth on vomer and narrow band on each palatine; interorbital  $2\frac{2}{5}$  to  $2\frac{4}{5}$ , convex; preopercle with obsolete and minute serrae, deep narrowly



D. 5198. Balicasag Island, S. 6°  
E., 10.25 miles (N. 9° 40' 50" E. 123°  
39' 45"), vicinity western Bohol.  
In 220 fathoms. April 9, 1908.  
Length 51 to 76 mm. 8 examples.

D. 5363. Cape Santiago Light, S. 79° W.,  
4.5 miles (N. 13° 47' 20" E. 120° 43' 30"),  
Bulacan Bay, Luzon. In 180 fathoms.  
February 20, 1909. Length 29 to 77 mm.  
11 examples.

D. 5301. China Sea, vicinity Hong Kong  
(N. 20° 37' E. 115° 43'). In 208 fathoms.  
August 8, 1908. Length 28 to 61 mm.  
17 examples.

D. 5317. China Sea, vicinity <sup>Formosa</sup> ~~Wangtung~~  
(N. 21° 36' E. 117° 27'). In ~~415~~ <sup>230</sup> fathoms.  
November 6, 1908. Length 64 to 67 mm.  
4 examples.



12564, 17322. Near Palag Bay, Luzon.

June 16, 1909. Length 197 to 223 mm.

7946. Pagapas Bay, Luzon. February 20, 1909. Length 255 mm.

15515. Palag Bay, Luzon. June 16, 1909. Length 228 mm.

6369. Port Jamelo. July 13, 1908. Length 174 mm.

13274. Rapurapur Island, Luzon. June 22, 1909. Length 155 mm.

14793. Sablayan, Mindoro. December 12, 1908. Length 188 mm.

4644. Tambun Sigambul, Tongil Island. September 14, 1909. Length 200 mm.

4977. Tataon Island, Tawi Tawi Group. February 21, 1908. Length 214 mm.

6433. Tilig. July 14, 1908. Length 233 mm.

13124. Powate Harbor, Mabayon Island. November 28, 1909. Length 133 mm.

19800. Mabayon Island. November 29, 1909. Length 140 mm.

5777 and 5778. D. 5563. Sammi Island (N.), N.  $79^{\circ}$  W., 6.1 miles (N.  $5^{\circ} 48' 12''$  E.  $120^{\circ} 36' 48''$ ), between Jolo and Tawi Tawi. In 224 fathoms. September 21, 1909. Length 44 to 49 mm.

1791. D. 5270. Escarceo Light, S.  $9^{\circ}$  E., 4.25 miles (N.  $13^{\circ} 35' 45''$  E.  $120^{\circ} 58' 30''$ ), Verde Island Passage and Batangas Bay. In 235 fathoms. June 8, 1908. Length 60? mm.

10074. D. 5291. Escarceo Light, N.  $39^{\circ}$  W., 2.20 miles (N.  $13^{\circ} 29' 40''$  E.  $121^{\circ} 00' 45''$ ), China Sea vicinity southern Luzon. In 173 fathoms. July 23, 1908. Length 56 mm.

22906. D. 5292. Escarceo Light, N.  $36^{\circ}$  W., 3.25 miles (N.  $13^{\circ} 28' 45''$  E.  $121^{\circ} 1' 12''$ ), China Sea, vicinity southern Luzon. In 162 fathoms. July 23, 1908. Length 69 mm.



to caudal base.

<sup>Mauritius</sup>

Red Sea, Arabia, Zanzibar, Maldives,  
East Indies, Philippines, Polynesia.

A very striking and highly contrasted  
fish, well figured by Bleeker and  
Weber.

7686. Agojo Point, Catanduanes Island,  
Luzon. June 10, 1909. Length 185 mm.

6514, 12993. Alibijaban Island, Ragay  
Gulf, Luzon. March 6, 1909. Length 155 to 198 mm.

8072, 17766. Alimango Bay, Burias Island.  
March 5, 1909. Length 218 to 260 mm.

18999. Cagayan, Vulu. June 8, 1909.  
Length 190 mm.

7734. Carisigan Island, Balabac.  
January 2, 1909. Length 265.

7231. Masinloc Bay, Zambales.  
November 22, 1908. Length 290 mm.

8047, 15101, 15102. Mampoy Island.  
March 3, 1909. Length 176 to 263 mm.



D. 5293. Escarceo Light, N.  $59^{\circ}$  W.,  
6 miles (N.  $13^{\circ} 28' 15''$  E.  $121^{\circ} 4' 30''$ ),  
China Sea, vicinity southern Luzon.  
In 180 fathoms. July 23, 1908.  
Length 28 to 52 mm. 6 examples.

D. 5549. Jolo Light (Jolo), N.  $80^{\circ}$  E.,  
15.8 miles (N.  $6^{\circ} 1' 15''$  E.  $120^{\circ} 44' 20''$ ),  
Jolo Island and vicinity. In 263  
fathoms. September 17, 1909. Length  
43 mm.

D. 5626. Kayoa Island (S.E.), S.  
 $5^{\circ}$  W., 6.7 miles (N.  $0^{\circ} 7' 30''$  E.  $127^{\circ} 29''$ ),  
between Gillolo and Kayoa Islands.  
In 265 fathoms. November 29, 1909.  
Length 68 to 85 mm. 6 examples.

2984. D. 5419. Lavis Point Light, N.  
 $27^{\circ}$  E., 17.8 miles (N.  $9^{\circ} 58' 30''$  E.  $123^{\circ}$   
 $46'$ ), between Cebu and Bohol,  
In 175 fathoms - March 25, 1909.  
Length 53 mm.

slightly enlarged denticles. Gill rakers  $40 + 75$ , compressed, nearly long as snout; gill filaments  $3\frac{1}{3}$  in gill rakers.

Scales 52 or 53 in lateral line to caudal base and 5 or 6 more on latter; 9 scales above lateral line, 19 or 20 below, 23 or 24 predorsal, 6 rows on cheeks. Suprascapula weakly denticulate. Scales with 11 to 15 basal radiating striae; apical denticles 12 to 120, with 3 to 14 transverse series of basal elements; circuli very fine.

D. X, 13, I, third spine  $2\frac{3}{4}$  to 3 in total head length, seventh ray  $1\frac{2}{5}$  to  $1\frac{3}{5}$ ; A. III, 10, I, third spine 3, fifth ray  $1\frac{2}{5}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ , moderate, emarginate; least depth of caudal peduncle  $2\frac{2}{3}$  to  $2\frac{4}{5}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{3}{5}$ ; pectoral  $2\frac{3}{5}$  to  $2\frac{4}{5}$  in combined head and body



D. 5589. Mabul (NW.) N.  $3^{\circ}W.$ , 2.8<sup>713</sup> miles (N.  $4^{\circ}12'10''E.$ ,  $118^{\circ}38'8''$ ), Sibulo Bay, Borneo and vicinity. In 260 fathoms. September 29, 1909. Length 78 mm.

1616. D. 5590. Mabul Island (NW.), N.  $22^{\circ}W.$ , 4.3 miles (N.  $4^{\circ}10'50''E.$ ,  $118^{\circ}39'35''$ ), Sibulo Bay, Borneo and vicinity. In 310 fathoms. September 29, 1909. Length 80 mm.

D. 5500. Macabalan Point Light (Mindanao), S.  $20^{\circ}E.$ , 7.9 miles (N.  $8^{\circ}37'45''E.$ ,  $124^{\circ}36'45''$ ), northern Mindanao and vicinity. In 267 fathoms. August 4, 1909. Length 22 to 26 mm. 6 examples.

D. 5501. Macabalan Point Light (Mindanao), S.  $35^{\circ}E.$ , 8.2 miles (N.  $8^{\circ}37'37''E.$ ,  $124^{\circ}35'$ ), northern Mindanao and vicinity. In 214 fathoms. August 4, 1909. Length 34 to 62 mm. 4 examples.



Depth  $2\frac{1}{4}$  to  $2\frac{2}{5}$ ; head  $2\frac{3}{5}$  to  $2\frac{2}{3}$ ,  
 width  $2\frac{1}{8}$  to  $2\frac{1}{3}$ . Snout  $2\frac{4}{5}$  to  $3\frac{3}{4}$   
 in head from snout tip; eye  $3\frac{3}{4}$  to  $4\frac{3}{5}$ ,  
 1 to  $1\frac{1}{2}$  in snout, 1 to  $1\frac{3}{5}$  in interorbital;  
 maxillary reaches  $\frac{2}{5}$  to  $\frac{1}{2}$  in eye,  
 expansion 2 to  $2\frac{2}{5}$  in eye, length  $2\frac{1}{8}$   
 to  $2\frac{1}{2}$  in head from snout tip; teeth  
 villiform, in bands in jaws of about  
 7 irregular rows, with outer row of  
 slightly enlarged teeth of which only  
 tips project through thick coriaceous lips  
 with 4 above and 6 below as slight  
 canines, all directed slightly outward;  
 narrow band of small teeth on vomer  
 forming wide angle, also narrow band  
 on each palatine and tongue smooth;  
 interorbital  $2\frac{3}{5}$  to  $3\frac{2}{5}$  in head, broadly  
 convex; preopercle with deep gash  
 receiving interopercular spine, hind  
 edge finely serrate and corner with

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D. 5502. Macabalan Point Light  
(Mindanao), S.  $35^{\circ}$  E., 8.2 miles (N.  $8^{\circ}$   
 $37'37''$  E.  $124^{\circ}35'$ ), northern Mindanao  
and vicinity. In 214 fathoms.  
August 4, 1909. Length 46 to 68 mm.  
17 examples.

3163. D. 5503. Macabalan Point  
Light (Mindanao), S.  $31^{\circ}$  E., 6.6 miles  
(N.  $8^{\circ}36'26''$  E.  $124^{\circ}36'8''$ ), northern  
Mindanao and vicinity. In 226 fathoms.  
Length 45 to 68 mm. 76 examples.

2823 and 2824. D. 5621. Makyan  
Island (S.), N.  $54^{\circ}$  W., 3 miles (N.  $0^{\circ}15'$   
E.  $127^{\circ}24'35''$ ), between Gillolo and  
Makyan Islands. In 298 fathoms.  
November 28, 1909. Length 68? to 76 mm.



Sea; Amboina). — Playfair, Fishes  
of Zanzibar, 1866, p. 14 (Zanzibar;  
 Aden). — Schmeltz, Cat. Mus. Godeffroy,  
 no. 4, 1869, p. 13 (Kandavu). — Meyer,  
Anales Soc. Españ. Hist. Nat. Madrid,  
 vol. 14, 1885, p. 10 (North Celebes; Tabukan,  
 Sangi). — Elera, Cat. Fauna Filip., vol. 1,  
 1895, p. 465 (Cebu; Samar; Borongum).  
Mesoprion macolor Günther, Journ.  
Mus. Godeffroy, vol. 1, pt. 1, 1873, p. 11  
 (Samoa).

Lutjanus macolor Bleeker, Atlas Ichth.  
Ind. Néerl., vol. 8, 1876-77, p. 75, pl. (65)  
 343, fig. 3 (Celebes, Buru, Ternate, Amboina,  
 Haruko, Banda, Waigiu, New Guinea).  
macolor typus Bleeker, Nederl. Tijds.  
Dierk., vol. 2, 1867, p. 277. Amboina.



2866 to 2868. D. 5367. Malabrigo Light, N.  $81^{\circ}$  E., 8 miles (N.  $13^{\circ} 34' 37''$  E.  $121^{\circ} 7' 30''$ ), Verde Island Passage. In 180 fathoms. February 22, 1909. Length 60 to 73 mm.

10056. D. 5280. Malavatuian Island (N.), S.  $60^{\circ}$  W., 6.10 miles (N.  $13^{\circ} 55' 20''$  E.  $120^{\circ} 25' 55''$ ), China Sea, vicinity southern Luzon. In 193 fathoms. July 17, 1908. Length 59 mm.

10094. D. 5281. Malavatuian Island (N.), S.  $84^{\circ}$  W., 4.30 miles (N.  $13^{\circ} 52' 45''$  E.  $120^{\circ} 25'$ ), China Sea, vicinity southern Luzon. In 201 fathoms. July 18, 1908. Length 62 mm.

5700. D. 5267. Matocot Point, S.,  $39^{\circ}$  E., 5.50 miles (N.  $13^{\circ} 42' 20''$  E.  $120^{\circ} 58' 25''$ ), Verde Island Passage - and Butangas Bay. In 170 fathoms. June 8, 1908. Length 60 mm.

Diacope nigra Cuvier, Hist. Nat. Poiss.,  
vol. 2, 1828, p. 431 (on Forsk.). — Rüppell,  
Neue Wirbelth. Fische, 1835, p. 93, pl. 24,  
fig. (Djedda). — Klunzinger, Verhandl.  
zool. bot. Gesell. Wien, vol. 20, 1870, p. 696  
(Koseir, Red Sea).

Genyoroge nigra Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 176 (Red Sea).  
— Lunel, Mém. Soc. Physique Hist. Nat. Genève, vol. 27, 1881, p. 2706 (Mauritius).  
Mesoprion niger Klunzinger, Fische  
Roth. Meer., 1884, p. 11 (Koseir).

Diacope macolor Lesson, Bull. Sci. Nat.  
Férussac, vol. 12, 1827, p. 138. New Guinea.  
— Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 415  
(New Guinea). — Lesson, Mém. Soc. Hist. Nat.  
Paris, vol. 4, 1828, p. 409 (Dorey Harbor, New  
Guinea); Voy. Coquille, Zool., vol. 2, pt. 1,  
November 13, 1830, p. 230, pl. 22, fig. 2 (Dorey  
Harbor).

Genyoroge macolor Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 170 (Molucca)



D. 5265. Matocot Point, Luzon, S.  
17° E., 3.30 miles (N. 13° 41' 15" E. 120°  
00' 50"), Verde Island Passage and  
Batangas Bay. In 135 fathoms.  
June 6, 1908. Length 34 mm.

D. 5268. Matocot Point, S., 50° E.,  
5.80 miles (N. 13° 42' E. 120° 57' 15"),  
Verde Island Passage and Batangas  
Bay. In 170 fathoms. June 8, 1908.  
Length 50 to 63 mm. 6 examples.

10048. D. 5269. Matocot Point,  
S., 54° E., 3 miles (N. 13° 39' 50" E. 120°  
59' 30"), Verde Island Passage and  
Batangas Bay. In 220 fathoms.  
June 8, 1908. Length 51 mm.

D. 5288. Matocot Point, Luzon,  
S. 20° E., 5.70 miles (N. 13° 43' 30" E.  
121°), China Sea, vicinity southern  
Luzon. In 140 fathoms. July 22, 1908.  
Length 10 to 11 mm. 3 examples.



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macolor niger (Forsk.)

Sciaena nigra Forsk., Descript. Animal.,  
1775, pp. 11, 47. Djedda, Red Sea. —

Bonnaterre, Tabl. Ichth., 1788, p. 123

(Red Sea). — Gmelin, Syst. Nat. Linn., <sup>vol. 1,</sup>  
1789, p. 1300 (Arabia). —

Walbaum,

Artedii Pisc., vol. 3, 1792, p. 308 (on Forsk.).

Lutjanus niger Schneider, Syst. Ichth.

Bloch, 1801, p. 326 (Arabia).

Lutjanus nigra Day, Fishes of India,

Suppl., 1888, p. 783 (Maldives).

Lutjanus niger Day, Fauna British India,

Fishes, vol. 1, 1889, p. 405. — Weber, Siboga

Exp., vol. 57, Fische, 1913, p. 253, pl. 12,

figs. 1-2 (Binongka; Banda). —

Fowler, Mem. Bishop Mus., vol. 10, 1928,

p. 203 (compiled).

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4546. D. 5593. Int. Putri (sea  
tangent) Borneo, N.  $52^{\circ}$  W., 17.2 miles  
(N.  $4^{\circ} 2' 40''$  E.  $118^{\circ} 11' 20''$ ), Sibuko  
Bay, Borneo, and vicinity. In 38 fathoms.  
September 29, 1909. Length 72 mm.

D. 5645. North Island (NE.), S.  $10^{\circ}$   
W., 1.6 miles (S.  $5^{\circ} 29' 6''$  E.  $122^{\circ} 36' 6''$ ),  
Bnton Strait. In 206 fathoms.  
December 16, 1909. Length 36 to 50 mm.  
2 examples.

D. 5336. Observatory Island (N.), S.  
 $42^{\circ}$  W., 9 miles (N.  $11^{\circ} 37' 45''$  E.  $119^{\circ} 46'$ ),  
Linapacan Strait. In 46 fathoms.  
December 18, 1908. Length 60 to 80 mm.  
18 examples.

5746. D. 5171. Omapui Island (W.),  
S.  $22^{\circ}$  W. 12 miles (N.  $5^{\circ} 5'$  E.  $119^{\circ} 28'$ ),  
Sulu Archipelago, vicinity Sibutu Island.  
In 250 fathoms. February 28, 1908.  
Length 47 mm.



canines of each jaw are directed forward.

Analysis of the species

a.<sup>1</sup> Coloration greatly contrasted, back blackish brown with several white blotches; head whitish, with end of muzzle and broad vertical band wide as eye blackish; lower half of body whitish, except blackish longitudinal band from pectoral axil back through middle of tail; fins largely blackish.

a.<sup>2</sup> Dark brown, most every scale with gray or blue spot, edged darker, on head often forming vermiculations; fins largely dusky brown.

niger

vermicularis

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D. 5190. Pescador Island, S.  $9^{\circ}$  E.,  
10.70 miles (N.  $10^{\circ} 8' 15''$  E.  $123^{\circ} 16' 45''$ ),  
Tanon Strait, east coast of Negros.  
In 295 fathoms. April 1, 1908.  
Length 45 mm.

D. 5518. Point Tagolo Light, S.  $64^{\circ}$   
W., 8.7 miles (N.  $8^{\circ} 48' E. 123^{\circ} 31'$ ),  
northern Mindanao and vicinity. In  
200 fathoms. August 9, 1909. Length 68  
to 77 mm. 6 examples.

1366. D. 5179. Romblon Light, S.  $56^{\circ}$   
E., 4.50 miles (N.  $12^{\circ} 38' 15'' E. 122^{\circ} 12' 30''$ ),  
vicinity Romblon. In 37 fathoms.  
March 25, 1908. Length 51 mm.

3936 and 3937. D. 5221. San Andreas  
Island (W.), S.  $27^{\circ}$  E., 5.50 miles (N.  
 $13^{\circ} 38' 15'' E. 121^{\circ} 48' 15''$ ), between  
Marinduque and Luzon. In 193 fathoms.  
April 24, 1908. Length 60 to 65 mm.



of head not extending forward of occiput. Scales all finely ctenoid, largely in slightly oblique series, become more horizontal below lateral line or axial line of body. Fins all with fine scales, at least basally. Dorsal with 10 spines, soft fin well pointed behind. Anal with 3 spines, soft fin like soft dorsal, with 10 branched rays. Caudal emarginate, lobes wide. Pectoral very long. Ventral shorter, not quite reaching anal.

This genus, associated with Putzimus Bloch, is distinguished chiefly by its fine, long, numerous gill rakers, to the number of 75 on the lower branch of the first arch. It is further characterized by the deep preopercular gash receiving an interopercular spine which directed forward. Also the small front

D. 5222. San Andreas Island<sup>719</sup>  
(W.), S.  $57^{\circ}$  E., 9.20 miles (N.  $13^{\circ} 38' 30''$  E.  $121^{\circ} 42' 45''$ ), between Marinduque  
and Luzon. In 195 fathoms. April  
24, 1908. Length 52 to 57 mm. 5 examples.

D. 5592. Silungan Island (M.),  
N.  $1^{\circ}$  W., 6.4 miles (N.  $4^{\circ} 12' 44''$  E.  $118^{\circ} 27' 44''$ ), Sibuko Bay, Borneo and  
vicinity. In 305 fathoms. September  
29, 1909. Length 48 to 58 mm. 2 examples.

4535. D. 5569. Simaluc Island  
(SE.), S.  $8^{\circ}$  W., 6.4 miles (N.  $5^{\circ} 33' 15''$   
E.  $120^{\circ} 15' 30''$ ), north of Tawi Tawi.  
In 303 fathoms. September 22, 1909.  
Length 45 mm.

4550. D. 5113. Vombro Island,  
S.  $7^{\circ}$  W., 9.50 miles (N.  $13^{\circ} 51' 30''$  E.  
 $120^{\circ} 50' 30''$ ), China Sea off southern  
Luzon. In 159 fathoms. January 17, 1908.  
Length 63 mm.



Genus Macolor Bleeker

Macolor Bleeker, Nat. Soc. Sci. Ind.  
Néerl. (Celebes), vol. 8, 1860, p. 25. Type  
Macolor typus Bleeker = Diacope  
macolor Cuvier, tautotypic.

Promblys Gill, Proc. Acad. Nat. Sci.  
Philadelphia, 1862, p. 236. Type  
Diacope nigra Cuvier, monotypic.

Body deep, well compressed, back elevated.  
Head large, obtuse in profile. Snout rather  
short. Eye large, high. Mouth large, jaws  
nearly equal or lower slightly protruded.  
Canines small, largely concealed in thick,  
coriaceous lips, 4 above and 6 below,  
of which former usually larger and all  
directed forward. Vomer and palatines  
with narrow band of fine teeth. Pair  
of small wide set nostrils each side of  
snout. Preopercle with deep gash, receives  
strong interopercular spine. Squamation

D. 5116. Sombrero Island, N.  $69^{\circ}$  E.,  
2.50 miles (N.  $13^{\circ} 41' E.$   $120^{\circ} 47' 05''$ ),  
Balayan Bay and Verde Island  
Passage. In 200 fathoms. January  
20, 1908. Length 32 to 76 mm. 41 examples.

D. 5118. Sombrero Island S.  $47^{\circ}$  E.,  
10 miles (N.  $13^{\circ} 48' 45'' E.$   $120^{\circ} 41' 51''$ ),  
Balayan Bay and Verde Island Passage.  
In 159 fathoms. Length 61 to 65 mm.  
3 examples.

D. 5287. Sombrero Island, N.  $68^{\circ}$  E.,  
11.25 miles (N.  $13^{\circ} 37' 40'' E.$   $120^{\circ} 39'$ ),  
China Sea, vicinity southern Luzon. In 379  
fathoms. July 29, 1908. Length 32 to 40 mm.  
5 examples.

4290. D. 5662. Tana Keke Island  
(W.), N.  $17^{\circ}$  W., 15.5 miles (S.  $5^{\circ} 43' E.$   $119^{\circ} 18'$ ),  
Flores Sea. In 211 fathoms. December  
21, 1909. Length 67 mm.



cheek and lower surface of head rosy pink, though scales without brighter spots or centers. Front half of soft dorsal and anal blackish brown.

Dark or blackish brown blotch on outer end of upper caudal lobe and deep brown at fin base above.

End of upper caudal lobe and narrow edge of lower one below pink. Pectoral axil brown, basal parts of rays orange, rest of fin rosy pink. Ventral pink basally, blackish terminally.

721

4806. D. 5368. Jayabas Light (outer),  
N.  $32^{\circ}$  W., 21.8 miles (N.  $13^{\circ}35'30''$  E.  
 $121^{\circ}48'$ ), Marinduque Island and  
vicinity. In 181 fathoms. February  
23, 1909. Length 26 mm.

D. 5372. Jayabas Light (outer),  
N.  $3^{\circ}$  W., 4.5 miles (N.  $13^{\circ}49'12''$  E.  
 $121^{\circ}36'9''$ ), Marinduque Island  
and vicinity. In 150 fathoms.  
February 24, 1909. Length 50 mm.

D. 5374. Jayabas Light (outer),  
N.  $9^{\circ}$  E., 7.4 miles (N.  $13^{\circ}46'45''$  E.  $121^{\circ}$   
 $35'8''$ ), Marinduque Island and  
vicinity. In 190 fathoms. March 2, 1909.  
Length 42 to 72 mm. 12 examples.

2291. Length 55 to 65 mm. 3 examples.



27,601 U. N. S. P. U. C. Harrison and  
H. L. Hiller. Length 143 mm. When fresh  
in alcohol rich rosy pink. Broad deep  
brown band from occiput, through eye  
and along side of snout to front of  
maxillary; frontal space of general  
rosy pink like general body color.  
Another band across body from spinous  
dorsal in front, extends across fin to  
ventrals. Another also from spinous  
dorsal posteriorly down, back and  
obliquely across side of caudal  
peduncle out over lower caudal lobe  
till including blackish brown outer  
rays at their tips. Ventrals and  
space between paired fins deep brown.  
Each scale of body marked with pink  
spot, forming striped appearance;  
stripes all slightly oblique, due to  
following in scale courses. Chest,

44429 U.S.N.M. Andaman Sea.  
Investigator Collection. Indian  
Museum. Length 53 mm.

47720 U.S.N.M. ~~N~~ 21° 09' W. 157° 53'.  
Albatross Station 3476.  
Length 53 mm.

86131 U.S.N.M. Gulf of Mexico.  
Grampus Station 10482. March 23,  
1917. Length 28 mm.



767  
5151, 7305. Jolo market. March  
6, 1908. Length 144 to 174 mm.

56229 U.S.N.M. Luzon. Bureau  
of Fisheries. Length 118 mm.

58019 U.S.N.M. Zamboanga.  
Dr. E. A. Mearns. Length 240 to 305 mm.  
2 examples.

84256 U.S.N.M. Zamboanga.  
Dr. F. Baker. Length 220 mm.

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Polyipnus laternatus Garman

Polyipnus laternatus Garman, Mem.

Mus. Comp. Zool., vol. 24, 1899, p. 238.

Blake 280, off Barbadoes, 221 fathoms.

— Garman, Discovery Rep., vol. 2, 1930,  
p. 305, fig. 14 (N,  $13^{\circ}25'W$ ,  $18^{\circ}22'$ , 900  
meters).

Polyipnus spinosus (not Günther) Goode  
and Bean, Oceanic Ichth., 1895, pl. 39,  
fig. 148.



coast of Sumatra, in 677 meters).  
— Weber, Siboga Exped., vol. 57,  
Fische, <sup>1913</sup>, p. 17 (Flores and Banda Seas,  
in 1600 to 2477 meters). — Weber and  
Beaufort, Fishes Indo Austral. Archipelago,  
vol. 2, 1913, p. 122, fig. 45 (above materials).  
Gonostoma elongata Fowler, Mem. Bishop  
Mus., vol. 10, 1928, p. 34 (compiled).  
Cyclothone elongata Goode and Bean,  
Oceanic Ichth., 1895, p. 101, pl. 32, fig. 119  
(type of Sigmops stigmaticus; Atlantic  
materials). — Alcock, Cat. Deep-Sea  
Fishes Indian Mus., 1899, p. 139  
(near Laccadive Islands, in 738 to  
1200 fathoms).

Depth  $1\frac{3}{5}$ ; head  $2\frac{2}{3}$ . Snout  $4\frac{1}{4}$  in head from snout tip; eye  $2\frac{1}{4}$ , greater than snout; maxillary extends  $\frac{3}{4}$  an eye diameter below eye, expansion  $1\frac{1}{3}$  in eye, reaches opposite front eye edge, length  $1\frac{1}{5}$  in head from snout tip; interorbital low.

Large luminous body on cheek directly below eye above <sup>lower</sup> preopercle limb. Opercular photophore close behind middle of hind eye edge and apparently another behind preopercle spine. Upper lateral series 8 between pectoral and ventral, third highest, second and seventh next at same level, first little lower, then fourth and eighth level and fifth and sixth subequally lowest. Ventral series 6 on isthmus, 10 between pectoral and ventral, 4 between ventral and anal then 3 elevated level with first and second of lateral series before and over front of anal fin, then 3 and 5 over anal fin and finally 4 small close set ones at caudal base.



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D. 14, third ray  $2\frac{1}{2}$  in total head length; adipose fin low, length 4; A. 16, fourth ray  $3\frac{3}{4}$ ; caudal  $1\frac{1}{3}$ ; least depth of caudal peduncle 3; pectoral  $1\frac{1}{4}$ ; ventral 3.

Back dark, with V-shaped extension down level to middle of eye. Length 34 mm. (Norman.)

Atlantic, West Indies. Norman says it differs from Polyipnus spinosus by the form of its post-temporal spines, presence of palatine teeth and arrangement of postabdominal photophores.

Polyipnus nuttingi Gilbert

Polyipnus nuttingi Gilbert, Bull. U.S. Fish Comm., vol. 23, pt. 2, 1903 (1905), p. 609, pl. 73. Approach to Pailolo Channel between Molokai and Maui, in 297 to 324 fathoms; off Oahu; Kauai; in 216 to 324 fathoms. — Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, 1922, p. 9 (reference). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 34 (cotypes; Alika, Hawaii).

Polyipnus spinosus (not Günther) Gilbert and Cramer, Proc. U.S. Nat. Mus., vol. 19, 1897, p. 416 (N. Lat.  $21^{\circ}9'$  W. Long.  $157^{\circ}53'$ , in 298 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee-fische, 1906, p. 120 (part). — Barnard, Ann. South African Mus., vol. 21, June 1925, p. 155 (part).



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Depth  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; head  $3\frac{1}{5}$  to  $3\frac{1}{3}$ , width  $1\frac{2}{3}$  to 2. Snout  $3\frac{1}{2}$  to 7 in head from snout tip; eye 2 to  $2\frac{2}{5}$ , greatly exceeds snout or interorbital; maxillary reaches  $\frac{1}{5}$  to  $\frac{1}{3}$  in eye, expansion  $1\frac{2}{3}$  to  $1\frac{7}{8}$  in eye, length  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in head from snout tip; interorbital  $4\frac{4}{5}$  to 6, low, depressed medially; opercular spine short,  $\frac{1}{3}$  of eye. Gill rakers 6 to 8 + 14 to 16, subequal with gill filaments or  $\frac{1}{2}$  of eye.

Scales 3 in median lateral series; 9 transversely. Scales thin, transparent, simple, very caducous or mostly fallen.

Preorbital photophore close to front orbital edge medially; cheek with large photophore, little less than pupil, little higher than lower opercular and opposite middle of eye or nearly median on cheek; 2 operculars, upper level with upper pupil edge and close behind orbit, lower below upper and level with lower hind maxillary end. Upper lateral series 8, first and eighth nearly at same level and but little below lower opercular, fourth only slightly lower than first, second slightly higher or level with lower opercular, fifth and sixth lowest



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of series or but slightly above pectoral origin, third highest or level with lower eye edge and seventh but slightly lower though little above level of spot on cheek; lower or ventral series with 6 on isthmus, 10 abdominal before ventral of which 2 before pectoral base, 4 between ventral and anal, 11 above anal base and 4 on lower surface of caudal peduncle before rudimentary caudal rays.

D. I to III, 11 or 12, fourth branched ray  $1\frac{3}{4}$  to 2 in head; adipose fin  $2\frac{1}{5}$  to  $2\frac{1}{3}$ ; A. II, 13 to 15, first branched

ray  $2\frac{4}{5}$  to 3; caudal  $1\frac{1}{8}$  to  $1\frac{1}{2}$ , well forked; least depth of caudal peduncle 3 to  $3\frac{1}{8}$ ; pectoral  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ; ventral  $2\frac{1}{4}$  to 3?

Dark brown above, with narrow V-like extension ~~midway~~ invading silvery white of flanks until down opposite level of lower eye edge. Sides and lower surfaces bright silvery white. Abdomen and under parts largely dusky to blackish, with photophores golden. Iris silvery gray. Fins all whitish.

Pacific Ocean.



51593 U.S.N.M.

Hawaiian Islands. Albatross  
Station. 4102. Length 47 to 85 mm.  
33 examples. Paratypes.

51599 U.S.N.M.

between Molokai and Maui. In  
fathoms. Albatross Station 4088.  
Length 83 mm. Type.

triangular gash above corner at hind edge. Gill rakers 31 to 40 + 63 to 75, very fine, compressed, elongate,  $1\frac{1}{3}$  in snout; gill filaments  $\frac{1}{2}$  of gill rakers.

Scales 52 or 53 along above lateral line to caudal base and 13? more on latter; tubular scales 47 or 48 in lateral line to caudal base; 9 or 10 scales above lateral line, 20 or 21 below, 22 to 24 predorsal forward to occiput, 7 or 8 rows across cheeks. Scales with 11 to 21 basal radiating striae; apical denticles <sup>92 to</sup> 135 weak obsolete points, with 6 <sup>to 14</sup> transverse series of basal elements; circuli fine.

D. X, 11, I, <sup>to 13, I</sup> fourth spine  $2\frac{3}{4}$  to 3 in total head length, seventh ray  $1\frac{2}{5}$  to  $1\frac{3}{5}$ ; A. III, 10, I, third spine  $2\frac{7}{8}$  to  $3\frac{1}{5}$ , fifth ray  $1\frac{2}{5}$  to  $1\frac{1}{2}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ .



~~Subgenus~~ Acanthopolyipnus ~~new subgenus~~ <sup>Fraser</sup>  
~~acanthopolyipnus~~

Type Polyipnus fraseri new species

Body deep, strongly compressed.

Head very large, compressed. Eye greatly enlarged, supero lateral, elevated. Mouth vertical, terminally superior, mandible with short spine at symphysis. Teeth in jaws very minute. Occipital spines very long, extend beyond front of dorsal. Preopercle angle with 2 divergent spines. Photophores rather small, lower opercular especially modified spheroid within gill opening and the anal

in 2 small restricted groups.  
Coloration largely whitish or  
silvery white.

Diagnosis. Differs from subgenus  
Polyipnus chiefly in its greater  
spiniferous armament and  
comparatively smaller and less  
developed photophores, especially  
the swollen lower opercular within  
the gill opening.

(ακανθός, spine; Polyipnus.)



Polyipnus fraseri new species

Depth  $1\frac{3}{5}$ ; head  $2\frac{3}{5}$ , width 2.  
Snout 5 in head from snout tip;  
eye  $1\frac{4}{5}$ , greatly exceeds snout or  
interorbital; maxillary vertical,  
hind upper edge extends  $\frac{1}{5}$  in eye  
diameter, expansion 2 in eye, length  
 $1\frac{1}{4}$  in head from snout tip;  
interorbital  $4\frac{1}{2}$ , low, deeply depressed  
concavely; preopercle ends in 2 spines,  
of which lower larger or half of eye;  
occiput with pair of long spines  
overreaching dorsal fin anteriorly,  
each with 2 widely divergent smaller  
spines basally. Gill rakers 7+13,

lanceolate, slender, little longer than gill filaments or  $1\frac{3}{4}$  in eye.

Scales apparently present in life, all now fallen and pockets indistinct.

Very small and inconspicuous photophore at middle of front eye edge; rather large photophore on middle of cheek below center of eye; 2 operculars, upper opposite middle of hind eye edge, lower as larger spheroid just within gill opening behind posterior directed smaller preopercle spine; 6 close set branchiostegal photophores, anterior;



lateral series on body 8, fourth lowest though little above pectoral fin origin, fifth progressively higher, then first little higher than fifth, second little higher than first, third highest or nearly level with lower eye edge, sixth level with second, seventh level with lower eye edge and eighth level with photophore on cheek; lower or ventral series as 6 on isthmus, crowded and remote from 10 abdominals, of which 2 anterior concealed in lateral view by spinescent striate bony wing like expansion below

pectoral base, 4 ventrals between ventral and anal fins, cluster of 4 small spots above posterior base of anal and 4 on lower surface of caudal peduncle close before rudimentary caudal rays.

D. 10, first ray  $3\frac{1}{3}$  in total head length; no adipose fin; A. II, 9, second simple ray  $3\frac{1}{4}$ ; caudal  $1\frac{1}{5}$ , deeply forked; least depth of caudal peduncle  $3\frac{1}{8}$ ; pectoral  $1\frac{1}{6}$ ; ventral  $2\frac{2}{5}$ ?

Color largely pale brown to whitish, sides and below silvery white. Iris silvery white to



grayish. Dark brown band at occiput. Another similar at predorsal extending below nearly level with lower eye edge and below front of dorsal gives off short oblique triangle directed toward middle of anal fin while another extension along anal base about  $\frac{2}{3}$  its extent. Except few scattered dark spots on caudal peduncle, chiefly above, no other dark markings. Photophores silvery. Fins all whitish.

Diagnosis. Characters contained chiefly in the description of the subgenus. Its coloration, combination and arrangement of photophores unlike entirely unlike those in any other member of the family.

Type no.

U. S. N. M.

2462. D. 5476. San Bernardino Light, S.  $37^{\circ}$  W., 13.5 miles (N.  $12^{\circ} 56' 24''$  E.  $124^{\circ} 25' 24''$ ), east coast of Luzon. In 270 fathoms. June 24, 1909. Length 51 mm.